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Ontario - Legislative Assembly

SESSIONAL PAPERS

Volume XXXVII. Part VII.

First Session of Eleventh Legislature

OF THE

PROVINCE OF ONTARIO

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SESSION 1905

TORONTO:
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LIST OF SESSIONAL PAPERS.

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ARRANGED ALPHABETICALLY.

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Bee-Keepers' Association, Report	20	*Printed.*
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Boundaries extension, correspondence	50	*Not printed.*
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Children, Neglected, Report	43	*Printed.*
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Crown Lands, Report	3	*Printed.*
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No. 2. Estimates for the service of the Province until the Estimates of the year are finally passed. Presented to the Legislature, 23rd March, 1905. *Not Printed.* Estimates for the year 1905. Presented to the Legislature, 7th April, 1905. *Printed.* Estimates (Supplementary) for the year 1905. Presented to the Legislature, 18th May, 1905. *Printed.*

No. 3. Report of the Commissioner of Crown Lands for the year 1904. Presented to the Legislature, 17th May, 1905. *Printed.*

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No. 6. Report of the Commissioners of the Queen Victoria Niagara Falls Park, for the year 1904. Presented to the Legislature, 31st March, 1905. *Printed.*

No. 7. Report of the Commissioner of Public Works for the year 1904 Presented to the Legislature, 31st March, 1905. *Printed.*

No. 8. Report of the Inspectors of Factories for the year 1904. Presented to the Legislature, 15th May, 1905. *Printed.*

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No. 12. Report of the Minister of Education, for the year 1904 with the Statistics of 1903. Presented to the Legislature, 17th May, 1905. *Printed.*

No. 13. Auditors' Report to the Board of Trustees, University of Toronto, on Capital and Income Accounts, for the year ending 30th June, 1904. Presented to the Legislature, 17th May, 1905. *Printed.*

No. 14. Report of the Ontario Agricultural College and Experimental Farm, for the year 1904. Presented to the Legislature, 17th May, 1905. *Printed.*

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No. 16. Report of the Fruit Growers' Association of the Province, for the year 1904. Presented to the Legislature, 12th April, 1905. *Printed.*

No. 17. Report of the Fruit Experiment Stations of the Province, for the year 1904. Presented to the Legislature, 10th May, 1905. *Printed.*

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No. 22. Reports of the Dairymen's Associations of the Province, for the year 1904. Presented to the Legislature, 11th April, 1905. *Printed.*

No. 23. Reports of the Live Stock Associations of the Province, for the year 1904. Presented to the Legislature, 15th May, 1905. *Printed.*

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No. 47. Report upon the state of the Library. Presented to the Legislature, 5th April, 1905. *Not printed*

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No. 52. Return to an Order of the House of the twenty-second day of April, 1904, for a Return giving names of all persons convicted for

violation of the Liquor License Act in the District of North Hastings in the years 1902 and 1903, together with the amounts of fines and costs in each case and the dates when the same were paid. Presented to the Legislature, 31st March, 1905. *Mr. Pearce. Not printed.*

No. 53. Return to an Order of the House of the thirty-first day of March, 1905, for a Return of copies of all correspondence between the late Government of the Province, or any member or official thereof, and the Sheriff of the County of Lincoln with regard to the appointment of George Bush as Gaoler for the County of Lincoln. Presented to the Legislature, 3rd April, 1905. *Mr. Jessop Not printed.*

No. 54. Report of the Commissioners appointed to enquire into and report the various phases of Railway Legislation in force in the United States, affecting taxation of Railways. Presented to the Legislature, 7th April, 1905. *Printed.*

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No. 56. Revised and amended Regulations for Mining Divisions relating to the Michipicoten and Temiskaming Mining Divisions. Presented to the Legislature, 20th April, 1905. *Printed for distribution only.*

No. 57. Copies of Orders-in-Council relating to the Education Department. Presented to the Legislature, 20th April, 1905. *Printed for distribution only.*

No. 58. Return to an Order of the House of the twelfth day of April, 1905, for a Return of copies of all correspondence, papers, documents, profiles and maps, between the Government or any Department thereof and the James Bay Railway Company, or any other person or persons, relating to the route of the James Bay Railway, from January 1st, 1904, down to April 1st, 1905, both days inclusive. Presented to the Legislature, 9th May, 1905. *Mr. Hoyle. Not printed.*

No. 59. Statement of distribution of Revised and Sessional Statutes, 1898 to 1904. Presented to the Legislature, 3rd May, 1905. *Not printed.*

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No. 61. Return to an Address to His Honour, the Lieutenant-Governor of the fifth day of May, 1905, praying that he will cause to be laid before

this House, a Return of copies of the Statement of the Case of the Dominion, and the answer of Ontario to the Statement of Case of the Dominion, filed on Indian Claims arising out of the Northwest Angle Treaty, No. 3. Presented to the Legislature, 9th May, 1905. *Mr. Smellie. Printed.*

No. 62. Return to an Order of the House of the fifteenth day of May, 1905, for a Return of copies of all correspondence, papers, documents and memoranda relating to the drainage of the River aux Raisin, in the Townships of Osnabruck, Cornwall and Roxborough, in the County of Stormont, between the Commissioner of Public Works or his Deputy, in the years 1901, 1902, 1903 and 1904, and a Mr. Bell, C.E., Mr. Laird, C.E., Mr. Rankin Provincial Drainage Referee, and the Councils of the Townships of Roxdorough, Cornwall and Osnabruck; also, copies of all correspondence between the Hon. G. W. Ross and any of the above parties; also copies of any letters regarding this matter received by the Government from Mr. J. W. McCart and Messrs. McLennan, Cline and McLennan; also, copies of letters, authorizing the payment of Mr. Bell, C.E., Mr. Laird, C F., and several men working with them; also, a Return of the amount paid to each of the above during the years 1901, 1903, 1904. Presented to the Legislature, 23rd May, 1905. *Mr. Kerr. Not printed.*

REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1904.

PART I.—FARMERS' INSTITUTES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO.

PRINTED BY L. K. CAMERON,
Printer to the King's Most Excellent Majesty,
TORONTO: 1905.

To the Honourable WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Farmers' Institutes of Ontario for 1904.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1905.

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TENTH ANNUAL REPORT

OF THE

FARMERS' INSTITUTES OF ONTARIO

FOR THE YEAR

1904.

To the Honorable the Minister of Agriculture:

SIR,—I have the honor to present herewith the Tenth Annual Report of the Superintendent of Farmers' Institutes. The series of meetings arranged for the year of 1903-4, had nearly all been held when I assumed my position as Superintendent on March 1st last, and the report presented herewith, ending with June, treats almost wholly of work planned by and carried out under the supervision of my predecessor, G. C. Creelman. The report presented will be issued in three parts:—Part I, in which this letter of transmittal appears; Part II, Report of Women's Institutes; Part III, list of meetings to be held during 1904-5, speakers with their subjects, and statistics for the past year.

THE YEAR'S WORK.

The records show that there was a falling off in both membership and attendance during the past year. This decrease, however, is not nearly so great as was expected by both delegates and officers. The weather during the time of holding the meetings was most unfavorable, and a number of meetings had to be cancelled, while others were very poorly attended because of the bad roads and severity of the weather. It is gratifying, however, to know that the great majority of the officers throughout the Province are entering into the work with renewed energy, notwithstanding the disappointments of the past season, and are most hopeful for a largely increased attendance and membership during the coming season.

SPECIAL FEATURES.

The special feature "Good Seeds" which was successfully presented during 1902-3, was continued last winter with increased interest and marked results. In addition to the above, a number of the Institutes arranged for special Seed Fairs and Judging Classes. At the latter those in attendance were given an opportunity of placing, according to merit, the animals which were being judged; then the presiding speaker would give his judgment, point out the defects in the animals under consideration, and draw attention to the desirable qualities. These classes have been most helpful, and the means of interesting many young men who never before took an interest in Institute work.

The excursion to the Agricultural College is one of the most helpful features in connection with the Institute work, especially to those Institutes in the western part of the Province. This is not only a means through which much valuable information is secured, but provides a way by which the treasury of the Institute may be replenished. During the month of June about 45,000 visited that institution. Many farmers now make it a part of their regular programme to visit the College at the time that the crops are in the best condition for inspection, and thus *see* for themselves what is being done in an experimental and educational way.

Women's Institutes.

It is gratifying to receive so many encouraging reports from officers of Women's Institutes throughout the Province. The membership has materially increased during the past year, while the attendance at the meetings has more than doubled. Many enthusiastic workers find great difficulty in inducing their neighbors to join in the work, while in other sections the meetings are always large and enthusiastic. One encouraging feature is that those who have been engaged in the work since its inception are the most enthusiastic and hopeful. A number of the Women's Institutes erected tents or arranged for some suitable room in which demonstrations were given at the time of the fall fairs. The work undertaken in most cases was purely educational, while in others the ladies also provided lunches, and were thus able to increase the funds in their Institute treasury.

Reprint of Articles.

It will be noticed that two of the articles appearing in this volume are reprints from last year's report, but as the supply is about exhausted, and there are many calls for these two articles, it has been decided by the Department to reprint them.

Questions and Answers.

The question drawer and discussion are two of the most helpful features in connection with Institute work, and the officers of institutes are requested to make provision for discussion at all their meetings. All questions and answers are classified under their proper headings and will be found in the back of report.

GEO. A. PUTNAM,
Superintendent.

SELECTED PAPERS AND ADDRESSES.

BREEDING AS A BUSINESS.

By Hon. John Dryden, Minister of Agriculture.

To be able to plan and carry to completion a modern city building, without a mistake or a misfit, or to build one of the great floating palaces now used for commerce on the ocean, are feats worthy of the twentieth century Scientific knowledge is essential to those who undertake such tasks; and accuracy in every detail of workmanship can alone lead to success. The whole world gives its meed of praise to those who undertake and carry forward such enterprises to completion.

But these men are dealing with dead matter which can be seen, which can be measured to the closest fraction, and shaped according to the will of the builder. How much more credit, therefore, is due the man who, dealing with living matter, shaped under influences which he can only indirectly control—trying to build what his eyes cannot see, and yet with an ideal in his mind and working year by year nearer its approach—he eventually succeeds in presenting for your inspection a living animal, healthy and vigorous, developing for you thick flesh in the most desirable parts, and, withal, keeping an eye to beauty and symmetry, so that the animal delights you as you gaze upon it. I assert that such a man deserves far more credit, and is in the highest sense a more worthy builder than he who deals only with stone and wood and iron.

Especially is this true when it is remembered that the ideal cannot be reached in one generation. A single individual may be produced, but that is but a beginning. What the breeder aims at is uniformity in his whole herd or flock, all being of one type, and that type of the greatest excellence possible. Let it be conceded at the outset that this will never be reached by accident or in any haphazard way. It must be by carrying out a well considered course, intelligently planned by one conversant with all conditions with which he has to deal. The man who builds a herd or flock or stud is in precisely the same position as he who erects a building or a ship. The result or outcome of his work must first exist in his own mind. The chief difference in the two lies in the fact that in the first case the builder will be able, before he commences his building, to place his model on paper, while the latter cannot do so, nor can he perfectly show it to another. But, I repeat, the ideal towards which all his work continually points must be ever present in his own mind.

I am not setting forth the course of the ordinary breeder, but rather of the man who has by diligent application of correct principles, reached such results as prove to the onlooker his sound judgment in the selection and mating of his animals. Such men, I admit, are not numerous, but they have lived in the past, and have shown to the world marvellous results. I have had the very great pleasure of coming in contact with a few such men who have been prominent in successful work of this character in recent years. The late Mr. Cruickshank of Sittyton fame was admittedly one such man working with a definite plan for the perfection of his Shorthorns. Andrew F. Mansell, had he continued in England, would undoubtedly have proved his right to be classed in the same list as he perfected his flock of sheep. Others are working along the same lines at the present day, but they have not yet reached their conclusions. The vast majority, however, are working entirely at random. How many men in any given township in your State

could give you an intelligent reason why they are using a certain horse, or what they expect to produce by the mating proposed? They hope to produce a living colt, but the precise type is a mere guess. I am not going too far when I say that the vast majority of the breeders of live stock on this continent are following, in part at least, the same happen-chance methods. To some extent good results are seen, but my point is that it is not generally the result of any definite plan. A male animal is selected which happens to be a wonderful prepotent animal, and the result is satisfactory; but he is probably followed by one which tends to spoil the former success, and it may be years before the owner can happen on another.

I am ready to assert that the results of mating animals together are controlled by certain definite principles, and it should be our constant study to discover what they are. The subject ought to be more frequently discussed, so that by a comparison of ideas from different individuals wise conclusions may be more rapidly reached. After all you can do, the fact will remain that the most successful breeder must depend on his own judgment and intuition for success. So much must be taken into consideration; such nice balancing of points. For instance, a grand and masculine head against a weakness of the loin, where the choicest of cuts are obtained; a noble carriage, but a lacking in width of chest. Which ought to be taken? An unlimited number of problems are always facing you, and that close, keen judgment which always chooses the best under the circumstances is seldom found in one man. It is so natural for most men to see always one or two points and miss altogether others that may be of greater value. The color of the horn, or its particular shape, seems to some more important than the covering of flesh, the quality of which they may not feel competent to judge. Others may be enamored of a level rump, while they do not see a narrow chest; and still others with entirely different points, which are always in view while others are unnoticed. Such persons can never reach anything like perfection. The whole animal must be considered, and as none are absolutely perfect, the greatest ability to evenly balance the various points always wins in the result.

There are some things which, in my opinion, ought to be considered as essential. A horse which is used to draw a load or travel long distances, no matter how handsome, is useless without sound limbs and good feet. A cow kept for dairy purposes, with beautiful conformation but no milking propensity, is utterly useless. A beef animal which cannot be brought to selling time under four or five years, is but a cumberer of the ground, and gives no profit. The essential points ought always to exist, but if not, then the skill of the breeder must supply them by proper selection and mating, or his breeding operations will prove a failure.

The essential points cannot well be named in this address, for the reason that they differ in different species. For instance, an essential point in a dairy cow is ability to give milk in sufficient quantity and of the proper quality; no matter what else exists, this must always be essential. A beef animal must be of the early maturing kind, in order, in these days, to give profit. This is not essential in the dairy cow, but certainly it is for beef production. It is essential that the horse which is to show great speed must possess entirely different characteristics to those just mentioned, great breathing power as well as strength of muscle and bone, and so on as to other animals.

Suppose, then, it is desired that we should embark in the business of breeding, how are we to proceed and what are the principles which govern? (In discussing this matter further I shall use the term herd alone as cover-

ing also flock and stud.) The herd consists of two parts, the females, and the male with which they are to be mated. In its commencement, it is well that the proprietor should have a definite idea of what he wants and make his selection of the females first, so that in the beginning the herd may show some degree of uniformity. This is specially important where only one male is needed. Then the male may be selected with a view of improvement, and considering the needs or weakness of the females. When the herd is sufficiently large so that several males are required, a greater opportunity is afforded for complete success. It is said that the male is half the herd. I would go farther and say that, if he is of the right sort, he is frequently far more than half the herd, and his selection becomes of the greatest importance, because in this there will frequently lie success or failure.

Suppose you have decided what is needed in conformation in your sire, and you are fortunate enough to find him, will he certainly fulfil your expectations? He may prove a complete failure, because he does not, when mated with your females, either improve them or reproduce himself. What is the matter? I cannot certainly answer, but I venture to assert it will most frequently be found in the lack of one or both of two characteristics. First, a lack of strength in blood lineage, or, second, a weakness in impressive character, which precludes the possibility of accurate reproduction. In order to discover the character of the blood lineage it becomes necessary to examine the breeding. This can only be ascertained by a study of the pedigree. Here the young beginner meets another difficulty. The pedigree conveys to him no information. There are some who would improve it by extending it so as to show a more complete lineage. Still it expresses nothing which gives complete information as to the power of the animal to transmit his own excellence. If it is to be of any value there must accompany the pedigree a statement of the history of the individual animals mentioned in it. An extended pedigree will not furnish this, and to him who is well informed it is not needed. To a man well versed in modern Shorthorns, the name of "Heir of Englishmen" or "Champion of England," or his son, "Lord Lancaster," or "Perfection," "Scottish Archer," and others is sufficient. The line of breeding as well as the individual characteristics are at once before the mind, aiming in forming a correct judgment. If these ancestors are known to carry the same useful qualities, then it may be taken for granted that the animal being considered will have a much better chance of prepotency than if a diversity of qualities is seen to exist in the ancestry.

But the pedigree is not alone sufficient; the individual character of the animal must be under inspection also. All of us have seen animals carrying a pedigree which could not be questioned, and yet the results from their use were entirely disappointing. It is evident that the individual qualities must first be considered, and if these are satisfactory then the pedigree may be studied with a view of ascertaining the probable prepotency of the animal as a sire. What I am now seeking to impress upon you is that both in individual character and pedigree, the animal should please you. You will then have a double reason for his use. Yet it is true that occasionally an animal inferior in quality, but tracing to a splendid ancestry, will give greater success than another with less intensity of blood, but much superior in appearance.

I presume that "Champion of England" was the most prepotent bull among Scotch Shorthorns in recent years. He was well bred, but he was not intensely bred. His appearance to the practised eye of his owner indi-

cated from the beginning his value in this respect. His sons for many years were selected in the same way; then his grandsons; until the blood of every animal in the herd possessed great power to reproduce a similar type.

Some one will want to know what are the marks of such an animal? Can he be always distinguished from his inferior mate? I believe it is impossible to fully and completely describe him. He should be looked at all at once, and not merely point by point, so as to balance the whole animal; defect against strength and strength against weakness in the different parts. There is a kind of intuition developed by experience and observation which aids in the right conclusions, but which cannot be well described. It is no doubt true that a sire cannot be properly selected unless a knowledge already exists of the females with which he will be mated; and it is quite possible that two men standing at the ring side may purchase two animals quite different in special characteristics, and yet both be abundantly satisfied.

In a general way, a female should be feminine in character, while the male should be entirely the opposite. He should not be coarse, although he may be large. Experience proves that the very worst results are seen from the service of a large, coarse animal. He should be straight in his lines, with compactness of body; fairly strong in his limbs, but of good quality. He should have a brave, gentlemanly bearing, with clear evidence of intelligence and docility as indicated by width of forehead, and a short, rather than a long face; a bright, keen eye; a neck not too long and well joined to the body, and a good width of chest. It is impossible to fully describe a strongly prepotent animal; he needs to be seen, when the expert at once is attracted; and the learner can only in that way really begin to be seized with a knowledge of the essential points of a prepotent sire. If we are to perfect these living animals, it can only be by intelligent action and not a chance conclusion. Our best men and our college professors should study and discuss the breeders' problems, so that here and there shall be found young men who, receiving a right start in this great field, shall develop that innate intuition which is hard to describe but which seems essential to success.

There is no good reason why there should not be developed American breeds of live stock, suited to the climatic conditions in which they are placed, and producing results suitable to supply the needs of our own people. In this connection let me say how pleased I was to learn that, under the approval and assistance of your national government an effort is to be made at the Agricultural Station in Colorado to establish an American breed of carriage horses. It may not reach immediate success, but it should be followed with intelligent persistence, as the proper result, when reached, will be a great blessing to all the people.

A great many problems not mentioned here will inevitably face the breeder. A red sire and a rich roan female produce when mated, a white calf, or a well-bred pair with beautiful muzzles present you with a black-nosed calf. How does it come? Who can answer? Yet I have a firm conviction that both are controlled by some (to us) unknown law. I feel sure that with continuous observation and experience under differing conditions and by different men, and with frequent discussions of such questions, the truth will some day be found.

Again there is the difficulty in determining what really exists under the skin. Is it mere tallow, or rich, juicy flesh? A practised hand may discover it for you, but the young beginner is lost, and too frequently those who are older are in the same predicament. I remember on one occasion

asking the late Mr. Cruickshank whether he could distinguish flesh from fat. His answer was characteristic. "I can aye tell in my ain beasts, but I dinna ken whether I could or no in others." Many cattle look plump when fully grown, but it is a filling up of fatty tissue, and not flesh, and the killing is in such a case very disappointing.

There is in this business of breeding an open field and an abundant scope for our wisest and best men. The way in many places has never yet been trodden. In following it let us always remember that we seek to produce an animal of commercial value; an animal which the world needs and will appreciate. Animals which will greatly add to the comfort, happiness and success of our people. It is not, therefore, what you or I may like, or for which another may have a fancy, but rather what the world needs and demands at our hands. Our minds must not be filled with fads or mere notions without reason. We ought to throw aside all prejudice, brought about either by education or historical reminiscences, and seize at once the real object aimed at. If you are breeding for milk, then let milk always be present, or discard your animal at once. Don't, I beg of you, listen to the argument so often thrust upon you:—"Just look at the pedigree!" Remember you cannot draw milk from a pedigree, no matter how perfect or what its length may be. And if you insert the name of your milkless cow in the continuation of such a pedigree, and her history is written with it, as it should be, you are surely fastening on it that which destroys its value, for opposite this milkless cow there can be placed as fully descriptive only two letters, "N.G."—(No good).

If you are seeking to produce a road horse, then you will keep in mind that which is under the horse—his feet and limbs. But that is not enough; you will want to know whether he can properly use them. They are not intended merely to be looked at, but to take you from place to place without too much wear and tear, and in a reasonable time. If the road horse cannot do this, then, I fear, however handsome he may be, I shall be obliged to label him also "N.G."

If you are producing beef or bacon, you must secure the quality desired and demanded by the commerce of the world. But that is not all; you will be bound to consider the cost. The value of the animal is commercial; can it be produced at a profit? Does it grow fast enough to give quick returns? If not, you ought to secure another: the great value of the pedigree of such an animal is not warranted by the results reached.

I might multiply instances as illustrating my point, but these are sufficient. This is a practical age, and the successful breeder must be practical also. The main issue must be kept always to the front. In conclusion, let me say that he who succeeds in improving any branch of our live stock industry will not only give pleasure and satisfaction to his fellow men, of whatever calling, but deserves that his name shall be held in esteem as one of the great of the earth.

HORSE-BREEDING IN CANADA.

By Robert Beith, M. P., Bowmanville.

There are very few pursuits more fascinating than horse-raising—one in which the anxiety of business may be relieved by the pleasures of actual contact with the noblest and finest of our dumb, intelligent animal friends; in which the mind can find exhilaration on the one hand, and on the other, scope for high exercise. The young farmer should love a good horse for its own sake and also for the sake of the business. The horse-breeding industry is a great one, it is a growing one and will continue to grow.

Machinery will not supersede the horse, nor will electricity, whether applied on the farm or in the automobile. The day of the horse is not over: on this continent it has but dawned; and I venture to predict that money will be made in horses, throughout our time. This great country is especially adapted for raising highblooded horses. So are many other sections of Ontario, and the growing needs of the Dominion will tax our capital for many years to come, to supply the demand. The first condition is a high standard of breeding. To illustrate this point let me quote a few figures. In Ontario, in 1883, there was, according to the returns, a total of 685,187 horses at a total value of $50,527,472. In 1902, the figures were 626,106 horses at a total value of $55,173,637,—fewer horses at a greater value, and this greater value was on account of the demand and improvement of breed. Good breeding means a better horse, a more valuable horse—a horse which will give more service on the farm, or on the road. For the size of our county we show well in the returns. In 1902 we show a total of 14,199 horses of all classes, valued at $1,283,438. The development of the country means the expansion of the livestock trade. The great west will buy our horses for many years, in large numbers; and it should be our aim to supply part of the demand. The market there will prove a profitable one for the right class and breeding.

Will you pardon me if I enlarge on this. I hold it to be vital to the farmer. The future lies in quality. This you see in the case of dairy and orchard. Our cheese has made a reputation for itself in the central market of the world. Why? Because science has come in to help the farmer. Education has entered the dairy, and cheese-making has become a science and an art. So with butter-making; so with our fruits; so with our finished beef and pork. Brains are required on the farm as well as in the factory or laboratory. Brains in the livestock industry of Canada are working wonders. The pure-blooded horse will pay the breeder, he will pay the farmer, and every one who wishes his country well ought to encourage the development of the industry on these lines. What has the improvement of breeds of horses already done for Canada? It were difficult to overestimate it.

Canada is rapidly coming to the front as the home of excellently well bred horses and monied men from the United States are aware of the fact. It would be hard to see a limit to the wealth that may thus be created in our country. We have suitable land for pure-bred horses; there is a capital market for quality; it follows that we should use every possible means to develop and improve our stock. I have had this brought to me, not only in the past, when my horses found purchasers in the United States, but very forcibly indeed at the St. Louis Exposition. Never before had we the same opportunity of showing our horses at a point so far south in the United States. The Western States, the Southern States, the Argentine Republic, Mexico, and other distant places, were represented—representative men, farmers, horsemen, stockmen,—were there from Europe, Africa and the Antipodes, they saw the prizes go to Canadian horses, and while I could not help the feelings of pride that would come upon me, neither could I help regretting that more Canadian competitors did not come forward to share the exceptional opportunity which was thus given of showing what Canadians can do.

As I have touched on this phase of the subject, perhaps I may be permitted to acknowledge to you the extreme kindness with which I was received by the authorities of the Exposition, who left nothing undone for the comfort and convenience of my horses, and who were personally most courteous in all their intercourse with me. I would not, however, have

you suppose that the hospitalities for which our neighbors to the south are justly noted, could for a moment wean my heart from Canada or affect my judgment as to the greatness of our own opportunities.

The value of such an Exposition as that held at St. Louis is twofold in the intelligent observer. An opportunity is afforded us to exhibit our best stock and products, thereby bringing them to the notice of men who have the desire and the means to purchase the best quality in the market; and on the other hand, the exhibitor spies the land, as it were, and finds out the strong and weak points of his neighbor's stock, and can profit accordingly. I saw nothing at that great Exposition but what I believe could be equalled, or even surpassed, by our own people, on our own soil, and to our own advantage. I, therefore, returned from the south prouder than ever of our own country, and with the conviction that industry and thrift and intelligence are all that are required here to enable us to hold our own and to keep equal pace with the enlightened nations of the world.

I have said that the day of the horse is not over. Radial railways will soon run along our main roads, joining village to town, and farm to village; electricity will multiply our home comforts and our farm conveniences, yet the horse will live and flourish through it all as a necessary beast of burden and as a luxury to the rich. It will be good business to cultivate the best and highest breeds. The farmer will find the good horse a safe and sure source of revenue, and young farmers in Ontario should make a specialty of horse breeding. I do not by any means place the horse in rivalry with other farm interests. The farmer needs every avenue open to him for producing revenue, and no good line should be neglected; I am a firm believer in the dairy and the orchard, and in developing the trade in cattle, sheep, etc. But this is an age of specialization, and I wish to impress in the young farmers of this country that profitable careers are awaiting them in horse breeding, if they determine to work on right lines. In developing the horse breeding business, the same consideration must be taken into account by the farmer as a merchant would take into account in purchasing his goods. The merchant studies the requirements and the tastes of his fellowmen; in other words he studies his market; and he buys so as to sell to advantage. So with the farmer. He should be a close observer of affairs, should study conditions at home and abroad. The barometer of trade should be as familiar to him as to the merchant or man of commerce. It will never do for him to be circumscribed by the limits of his 100 acre or 1,000 acre farm; his outlook must be wider so that he may be able from the facts of his knowledge to forecast the market and to prepare for it accordingly. It may be difficult, I admit, but by no means impossible, for the farmer to gather current facts of business.

The young farmer is an intelligent man to-day; he has the advantage of the public and high schools and every farmers' son should aim at a high school education. He has the advantage of the Farming Journals, which are freely circulated throughout the farming communities, and contain a great deal of practical advice based on experience. I sometimes think these farm papers should give more space to the general outlook—to the markets of the world and the commercial conditions likely to arise—so that the farmers might have more reliable information to guide them in estimating the chances of the future. We have the farm and stock bulletins from the Experimental Farms and Colleges, worthy of close study. Indeed, there are advantages within the reach of the young farmer to-day undreamed of by his father in the day of the single plow and the sickle. There are besides, the obvious markets with which we are familiar, but of which we do not avail ourselves as we ought. The British army will always afford

a good market for suitable horses—a good Hackney cross, for instance. Canada could raise thousands of horses for cavalry purposes, which would yield good profit and furnish a source of supply on which the Imperial Government could rely. Attention has not been sufficiently drawn to this market, nor has anything like organization been instituted among our farmers with the view of breeding suitable cavalry mounts. It is worth while getting into line and making an effort to secure this trade.

But two classes of horses will always prove marketable. The heavy-draught horse is coming to the front in the expanding farm lands of the west. The construction of railways is going on rapidly, lessening the distances from farms to the railway depots, and as one result making it better business to haul few heavy loads, with heavy horses, than many light loads with light horses. The strong, well-bred heavy horse, as the farm is improved and stabling and feeding improved with it, gives the best service and naturally supersedes the light draught, ill-bred horse, and the extent of the western market cannot now be even estimated. This line, you may depend upon, will, in our generation at the very least, not diminish in demand in the home market, and capital invested that way will have every chance of producing safe profits. Not less certain seems to be the outlook for the beautiful Hackney horse. Throughout the length and breadth of the land there are signs of a great industrial awakening. Our factories are busy, our mines are yielding their wealth, our fisheries are flourishing, and an urban population is being formed which, as in older and richer countries, will demand the luxuries of horse-flesh, beautiful to the eye, smart and graceful, for road and ring, and which our Hackneys can well supply. For these and other breeds the Ontario farm ought to prove a fruitful nursery.

The field, not the stable, is the place on which to develop the good points of a horse; and on the farmer's love for the animal and his knowledge of the art of rearing him much of our success as a horse-breeding country will depend. There is room for us all at the top of the ladder; very little room, indeed, for any at the bottom. My remarks are thus directed in a desire that the farmers of this Province shall strive to reach the top, shall be inspired by a laudable ambition to excel, and be stimulated by the example of those who have succeeded not beyond their hopes, but sometimes beyond their own expectations.

RAISING HORSES FOR PROFIT.

By W. F. Kydd, Simcoe.

Ontario has witnessed an enormous advance in many ways within recent years. It is noticeable, however, that cheese-making and the bacon hog industry have distanced all other branches of agricultural activity. There is no reason why this should be. Especially should horse-raising take a much stronger place in the interests of Ontario farmers.

There is a demand for four distinct types for Canadian horses:—(1) heavy draught; (2) carriage; (3) roadsters; (4) saddle horses. There is no special market for other types. As profit earners they should probably be given rank in the order named. Breeding of trotters by farmers cannot be too strictly discouraged. Attempts to do so have nearly always resulted in financial ruin.

The following are good reasons for making the draught horse our choice:—(1) Draught horses earn their keep at an earlier period than others; (2) If the draught horse should have a spot or blemish it does not materially reduce his market value; (3) Any farmer can easily and properly break draught horses and fit them for market, while the proper training for carriage horses amounts to a science; (4) In the case of heavy horses, there are no excessive profits for the middleman. Canadian heavy draught horses are valued highly in foreign and western markets, and there is practically no limit to those markets.

Every horse to command a good price, must have large, well shaped feet, and stand straight upon them, or in all likelihood he will not go straight. Pasterns must be sloping to give the horse a free and elastic movement; legs flat, clean, with no appearance of meatiness.

In draughts, feather of good quality and considerable quantity is absolutely necessary. The next important point is the loin or coupling. Unless a horse is strong there, no matter how well the quarters are muscled, the horse will be a hard keeper and a poor looker. Horses flat over the loin are invariably long backed and open ribbed, and this conformation is never deep in the girth, consequently this type of animal has a weak constitution, because the heart and lungs have not sufficient room to do their work in times of extreme exertion. The ribs should be well sprung or the back will not be strong.

The typical draught horse of the present day must have sloping, massive shoulders, with a fairly high wither. His neck should be a fair length, with no appearance of thickness about the throat. The head indicates his disposition. It should be broad and flat between the eyes, the latter should be large, full and mild. In no case should there be any appearance of "pony head." To raise such a horse as I have described, the farmers must stop selling their best mares and use as good sires as can be procured, strong in character, masculine in appearance, and yet of good quality.

The importance of selecting the best of stallions cannot be too much emphasized. It is my conviction that the Government should license stallions, and only those up to a high standard of quality and pedigree. Every breeder to be successful must have his ideal, and work towards it by carefully mating the characteristics of dam and sire.

There is nothing against a mare being worked while pregnant; in fact, she would be better working than otherwise, but in every case her shoes should be removed, because the foot has not the sensitive feeling when the shoe is on, and after foaling she might tramp on her foal. She should be gently handled and liberally fed on nutritious food, but in no case should it be of a very succelent nature. Much laxative food has a tendency to weaken the foal.

A foal should not be allowed to run with its dam while the latter is at work, but should remain in a roomy, well-lighted box-stall, and taught to eat oats mixed with a little bran, water being within reach.

In any case the foal should be taught to eat several weeks before weaning. It should be halter broken and tied when quite young. The foal has now arrived at the most critical stage of its life. A roomy box-stall, with plenty of exercise in the open air daily, is necessary for the proper development of muscle and general health. A good grain ration for the winter would be crushed oats and bran, three parts oats to one part bran. An average colt should get from five to six quarts of this mixture daily, with plenty of good clover hay and a few roots. Salt should be within reach. In no case should they be fed more than is eaten up clean at each feed.

The feet should be frequently examined, and pared when necessary. The young animal should be kept in a thrifty, growing condition until ready for market. The education of horses, beginning at the beginning as it should, may be summed up in three words: gentleness, patience and firmness.

No animal should be offered for sale unless thoroughly finished. A finished horse is a horse in a high condition, presenting an unworn appearance. See that the feet are not broken. Have the mane pulled and the tail straightened. Trim off long, coarse hairs on ears and jaws. Have the horse fat. Then consult the market, and ask for and stick to a good, fair price.

OUR LIVE STOCK MARKETS, DOMESTIC AND FOREIGN.

By T. H. Mason, Straffordville.

A country depending so largely on live stock for its prosperity necessarily is very much interested in the live stock markets, and a little information as to where and how we market our live stock products may prove of some interest to the readers of this report.

1. *Domestic Markets.* In Ontario, with a large population enjoying a high degree of prosperity, there is a very large consumption of meats and other animal foods. According to the Bureau of Industries' report for 1902, 673,544 head of cattle, of a cash value of $23,430,908, were sold or slaughtered from Ontario farms. A large number of these animals were exported, and others are used for breeding purposes; so that it is somewhat difficult to estimate the value of those actually killed and consumed in the Province,—probably $12,000,000 would not be very much out of the way. Only our best cattle are exported. The next grade, best butchers' cattle, are often very nice, smooth, well-bred cattle, but are not carried up to the weights required by the export trade. They furnish a very superior article of beef, such as is usually found in our best city and town shops. Then, following the down grade, we get poorer qualities of cattle, sold in the smaller shops, until finally we find at the bottom of the list the canner—worn out dairy cows, scalawag steers and stags, dairy bulls, and, in fact, practically the refuse of the market. A very large trade is done in Eastern Ontario with Montreal and other Eastern markets in this line. In addition to the markets mentioned, a very large number of animals are killed by the farmers themselves for home use, varying considerably in quality, from the very best young beef animal down to the superannuated dairy cow, finishing a career of great usefulness by furnishing a "very lasting quality of beef." Then, in some sections, "Beef rings" are very much in evidence, and the local country butcher now reaches nearly every home in the community.

For young stock, a strong market is found in the Northwest and Manitoba, large numbers of young cattle, calves, yearlings, and two-year-olds being brought up and shipped there for feeding on the range. Many of these cattle find their way out again as exporters, but a great many of them must be used locally and sent to British Columbia, as they are not good enough for exporters, and cannot be made so, even under the most favorable conditions. Indeed, I cannot see how even with free grass, it would be possible to make anything out of the miserably bred stuff that furnishes a very large percentage of our shipments to the Northwest.

The consumption of lamb and mutton in our local markets is not relatively large. Mutton is not growing in popularity, especially in the country districts. While the quality of our lamb is very good, that of our mutton is generally poor. The reason for this is that very few lambs are carried over and fed specially for mutton. The sheep for mutton are usually the ewes that have failed to breed, those that have lost lambs, and the old breeding ewes that have finished their career. So we could hardly expect from animals of this stamp very good mutton. Our total value of sheep and lambs consumed in the Province will probably not exceed one million dollars. Besides those exported, a considerable number are sent to the city of Montreal.

There has been a very large increase in the amount of ham, bacon and other pork products consumed in the domestic markets of the country during recent years, and the tendency is for a still further increase. No animal food is increasing in popularity like ham and bacon. The superior class of hogs now produced and the improved methods of curing adopted by our factories, produce a leaner, mild-cured, very appetizing article, that is steadily growing in popular favor. In addition to supplying the export foreign trade and the local markets of the Province, a large amount of stuff is shipped to the Province of Quebec and the Maritime Provinces, besides some to Manitoba and the Northwest. The consumption of fresh pork, while quite a considerable item, is comparatively small. It is estimated that about one-third of the total production of Canada is consumed at home; the balance is exported.

The export trade of live stock is large, and brings very large sums of money into the country annually. The first shipment of live cattle to Great Britain was made in the summer of 1876, and a part of the first shipment was fed at the O. A. C. The firm of Frankland & Reeves made the first shipment. I happened to be one of the boys detailed to drive the cattle down to the market. They were very heavy cattle, and I remember Mr. Frankland saying to Mr. Brown, "They are too fat, Professor; it's no use; I can't sell beef like that in Toronto in hot weather." So they dickered away and were a long time in making the bargain. After the bargain was concluded, Mr. Frankland told us that he was going to try the British market, and that they were just what he wanted.

The total exports of Canada to Great Britain last year were 161,170 head, valued at $10,842,438. About $300,000 worth was sent to the United States, so the export cattle trade of Canada brought in a little over $11,000,000.

Large, heavy, fat cattle were in demand in the early days of the trade: now the smaller, more fleshy, and more tidy beast takes the cake. A large percentage of the cattle shipped were ranch cattle from the Northwest.

The export trade in sheep and lambs to Great Britain last year was a little over 116,000 head, valued at $656,000; to the United States principally lambs, 284,000 head, valued at $961,000. The trade in swine products has become one of the most important lines of production. The live hogs are marketed at the packing houses, situated principally in central and western Ontario. When properly cured, the great bulk of the meat, after supplying the local demand, is marketed in Great Britain. The total value of all swine products exported last year slightly exceeded $16,000,000.

I have not said anything about the export trade in horses, for the reason that we are not exporting many. A few years ago the Province went largely out of the business of producing horses, and now we can hardly meet the local demands. An excellent market exists both in Great Britain and the United States for superior horses of all descriptions, but

we are not able to supply it. Our total shipments last year were, to Great Britain, 1638 head, valued at $224,845; to United States, 1,879 head, valued at $336,519.

As to prices for the coming season, the prospects are none too bright. We have enjoyed a period of exceptional prosperity and of exceptional duration, and it would be only natural to expect that there will be a period of reaction. This period is already setting in. Although owing to extremely favorable local conditions we will probably feel it less than any country in the world, still the fact remains that for a very large proportion of our live stock we have to depend on outside markets, principally the British market, which, under present conditions, is the food market for the surplus of all countries. So that anything that impairs the purchasing power of the British people, or that causes an excess of supplies in that market, will inevitably be felt here. There is not room in this article to discuss the general market situation, but the general tendency is to lower market values for nearly all leading lines of live stock.

THE BEEF ANIMAL FROM THE BUTCHER'S AND FEEDER'S STANDPOINT.

By M. Cumming, O. A. C., Guelph.*

One has only to visit some of the leading meat markets of Great Britain to ascertain that there are yet many of our Canadian feeders and breeders of live stock who have not reached the ideal we think Canadians ought to reach in the production of marketable beef cattle. In Britain, our greatest export market, Canadian cattle are considered, as a class, inferior not only to the Scotch and English product, but even to the cattle shipped from the United States. "So long as this continues to be so," is the substance of statements made by a leading Smithfield merchant to the writer, "so long will we have to continue to pay lower prices for Canadian cattle than we would wish to pay. National preference would lead us to favor the product of our own colonies, but the best markets of the old country, such as Smithfield, are very exacting, and therefore no patriotic or national sentiment can make us overlook defects in your cattle. While there are exceptions," continued this Smithfield merchant, "yet, as a class, your Canadian cattle are deficient in quality and are often times underfitted for our markets."

It is in view of these facts, ascertained personally by the writer during a recent visit to the old country, that we revert to a somewhat old-time topic; and while, perhaps, nothing new to the majority of readers will be presented, yet there must be some who, in perusing such an article will at least have their attention called to the consideration as to whether the cattle they are selling belong to the rather too small class of good ones, or to the altogether too large class of poor ones, that find their way from Canadian farms to British markets. Moreover, a knowledge of the class of beef animals required by the markets which are supplied is perhaps the most important prerequisite not only for the successful feeder, but also for the breeder of pure-bred stock. Sometimes, especially when the "pure-bred" market is booming, and speculation among pedigrees is rife, the breeder is very apt to overlook this fact. But, nevertheless, no matter what their breeding or fine points, pure-bred cattle are ultimately valuable only so far as they can produce animals that will meet the exacting demands of the block. An inquiry into the requirements of such high-class markets as Chicago and Smithfield, London, is the purpose of this article.

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We certainly give utterance to a truism when we say that the great thing that renders a steer valuable is that the animal possesses a class of meat that will command the best price upon the market. To be more definite, the worth of a steer, other things being equal, depends on the proportion of the more valuable cuts to the inferior priced meats. When in addition to this the steer possesses the further requisite of quality, it will be just the steer that will bring satisfaction to the seller and equally high satisfaction to the buyer. It should, therefore, be the aim of both the feeder and breeder to choose and breed those animals that most nearly fill these requisites. To make this point clear we can do no better than submit the following illustrations, showing the cuts, the relative weights, and the average prices of these cuts in the two leading beef markets of the world,

FIG. 1.—A prime beef heifer, both from the feeders' and breeders' standpoint.

Chicago and Smithfield, London. For the former we are indebted to the *Drovers' Journal*, Chicago, which states that the prices attached are corrected to date by a leading dealer in meats, and are a fair representation of the prices for which meat is now (winter 1902-3) being sold to the customers. For the English method of cutting and prices, we are indebted to Mr. Wm. Cooper, of the Smithfield market, London, who states, in regard to prices, that they are a fair average the year around.

Chicago Method and Prices. The weights of cuts and values are given for a first-class beef steer weighing about 1,200 pounds.

In looking at diagram No. 1 it will be noticed that the highest priced cuts are the prime of rib, porterhouse, sirloin, rump and round, and that the other cuts are very considerably lower in value. Dividing the steer

into these two classes of cuts, which we may term best quality and second quality, we will indicate in the following tables the relative weights and values of these two classes:—

Best Quality.

Name of cut.	Weight of cut.	Price per lb.	Total values.
	lbs	cts	$ c.
Prime of rib	68	16	10 88
Porterhouse	92	22	20 24
Sirloin	34	18	6 12
Rump	28	10	2 80
Round	124	8½	10 24
Totals	346		50 58

Second Quality.

Neck	24	4	0 96
Plate	112	4½	4 04
Flank	22	5	1 10
Chuck	130	7½	9 75
Shin	50	4	2 00
Shank	24	3	0 78
Totals	362		18 57

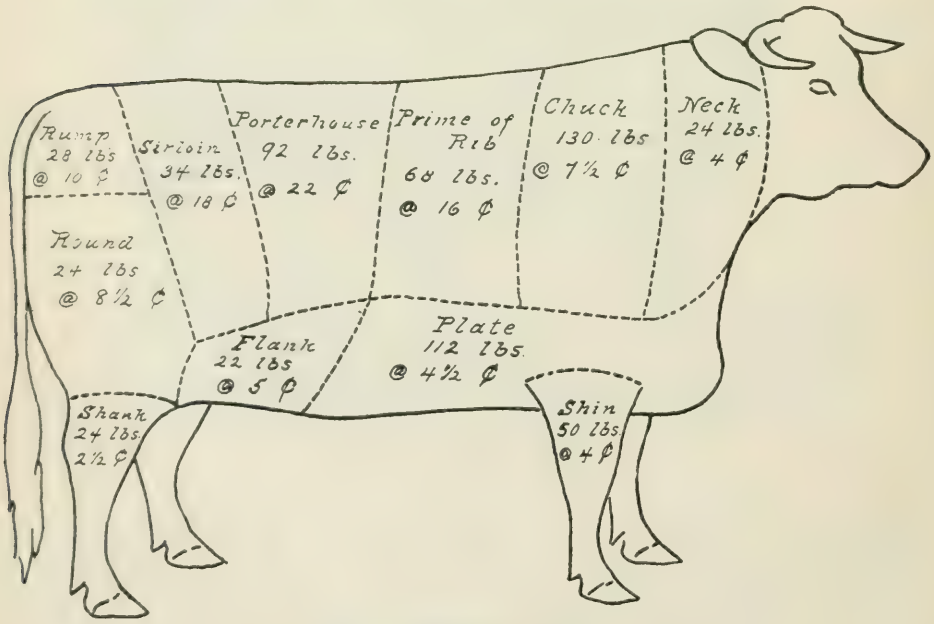


Fig. 2.—Chicago cuts and prices.

These tables show that the value of 346 pounds of meat cut from the best sections is worth $50.58, and, on the other hand, 362 pounds from the inferior sections is worth only $18.57. When, in addition to this, we note that, among the cuts that we have designated second quality, the chuck is considerably the most valuable, we can fully appreciate the reason why steers of the modern beef type, which is described below, bring so much higher prices than so-called scrubs.

This same fact is equally well illustrated in Fig. 3, which shows the method of cutting and the average price of cuts in the Smithfield market. London, England.

It will be noted that there is a considerable difference not only in the prices, but also in the methods of cutting beef in the respective American and English markets. At the same time the high priced cuts in both are in the same parts, viz., back, the rump and round, and the demands for each are best met by the same class of steer.

Now there is one very important point which the successful feeder must take into consideration when selecting his steers, and this is that it takes just as much feed to produce the 362 pounds of $18.57 meat as it does to produce the 346 pounds of $50.58 meat. The more of the latter that a steer yields, and the less of the former, the greater will be the profit to the feeder. But there is a limit to this, for, just as it is absolutely impossible, in the very nature of things, to have a steer that is all first-class beef, so is it impossible to have a steer that will produce a large amount of first-class beef without being well-developed in the other parts. Of this we will speak further when we come to consider the beef animal more particularly from the feeder's standpoint.

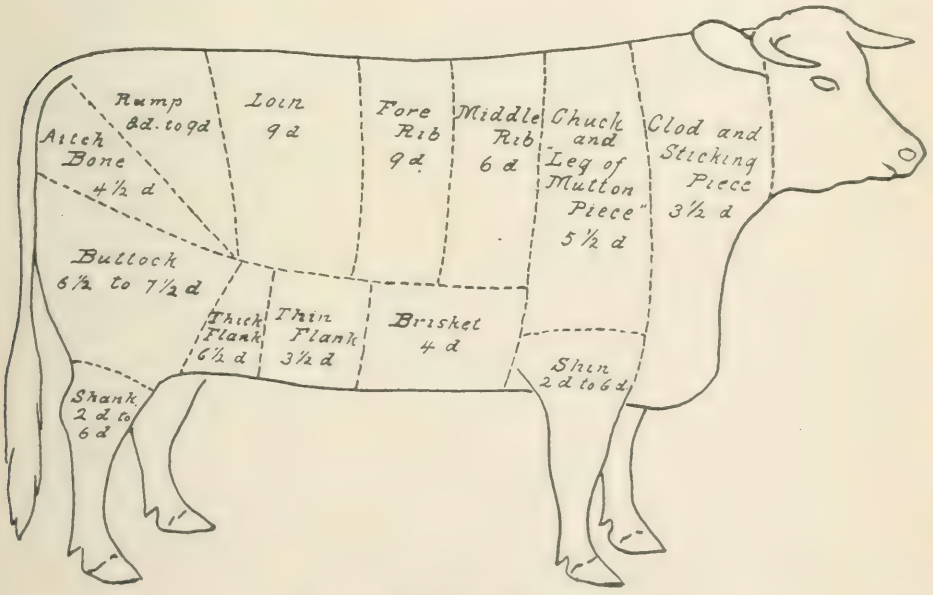


FIG. 3.—London, England, cuts and prices.

For the present that animal best meets the needs of the block that is wide and thickly fleshed all along the back, loin and rump, and that is proportionately developed in the round.

It is just in this faculty of producing a relatively high percentage of the best cuts of meat that pure-bred beef animals, such as the Shorthorn, Hereford, Aberdeen Angus, Galloway or high grades of these breeds differ from animals of dairy or scrub breeding. This fact was very clearly demonstrated in a block test recently conducted at the Missouri Experiment Station, in which the relative proportion of porterhouse and sirloin to the other cuts was shown in a pure-bred Shorthorn steer and a scrub steer.

—	Weight of all cuts.	Wt. porterhouse and sirloin.	Per cent of porterhouse and sirloin to all cuts.
	lbs.		
Shorthorn	1,046	127	12.10
Scrub	824	82	9.10

It will be noted from this table that the Shorthorn steer produced relatively one-third more porterhouse and sirloin than the scrub, so that, had the Shorthorn weighed the same as the scrub, there would have still been about 26 pounds more of these cuts in favor of the Shorthorn. A further comparison would show a corresponding proportion of the other high priced cuts in favor of the Shorthorn.

So far as this is concerned we do not know what more could be said to prove the importance of the well-bred animal in beef production: but there is yet another consideration, to which we have just briefly referred, viz., quality and early maturity.

During recent years, our best markets have become very exacting in regard to the quality of beef animals. People have become educated in regard to the meat they buy, and whereas in former years it was easy to sell the meat from four and five year old steers, nowadays, in the best markets, this class of meat is entirely overlooked in favor of the meat from two and two and a half year old steers, which in comparison is more tender and juicy, and has the fat marbled through the lean instead of being in thick masses on the outside. Heavy, coarse, and poorly covered bone is equally disparaged, and the modern butcher calls for "handy" steers ranging from 1,200 to 1,500 pounds in weight, with the flesh evenly distributed over all parts, of fine grain, well marbled (*i.e.*, the fat nicely mixed through the lean) and without the unsightly and wasteful rolls of fat which are so often seen on the ribs and at the tail-head of steers of inferior quality. Such has become this demand for quality that a recent writer in a Chicago live stock paper has modernized a famous piece of literature, which he concludes thus, "And now abideth form, constitution, quality, these three; but the greatest of these is quality." Here again the well-bred steer stands forth as the champion of quality and early maturity. These points we will enlarge when discussing the steer from the feeder's standpoint.

Before passing by this aspect of the subject, there is one other feature to which we would call the reader's attention. It may be thought from the above discussion that the high-class beef animal caters mostly to the taste of the wealthier classes, viz., those that can afford to buy the rib roasts, porterhouse and sirloin cuts, but in order to show that this same animal is a very democratic beast, and also meets the needs of the poorer classes, we will call the reader's attention to the comparative value of such a cut as the chuck in a prime beef animal, and in a scrub or dairy animal. We have classed this cut as of second quality. At the same time if any one will observe the relative amount of meat on this part of an animal of the recognized beef conformation, and on one of the dairy conformation with its V-shaped, barely covered shoulders, he will readily see that the man who buys the chuck from the former, is infinitely better off than the one who buys the same cut from the latter. In fact, the chuck from a prime beef animal is in many cases better than the rib roasts or porterhouse cuts from animals of dairy or scrub conformation. Thus once again the prime beef steer stands forth pre-eminent in his own sphere.

So much for the market and its demands—but what of the feeder? Upon him devolves the task not only of producing the class of animal already described, but also of selecting and fitting the animals that, when

finished, will satisfy these requirements. Incidentally he must make his profits, and it is just in the faculty of selecting animals that will not only be good feeders, but will also meet the demands of the market, that his profit-making consists. Fortunate it is for him that, as we shall see, the butcher's and his ideal are practically the same.

Were it possible to secure such, the butcher, as we have already stated, would like to buy animals that were made up altogether of high-priced cuts. But not only is this an impossibility, but, moreover, experience has clearly demonstrated to him that the kind of steer that will produce the largest percentage of high-priced cuts, is the very steer that the successful feeder likes to feed. This is the thick-bodied, deep-ribbed, short-legged steer of good quality. Narrow or shallow, long-legged steers are not only poor feeders, but also produce a relatively small amount of high-priced meats. Moreover, those that lack in quality not only take too long to come to maturity and hence run away with the profits to the feeder, but they also produce a carcass, which, on account of its too coarse bone, its uneven covering of flesh or its patchiness, is an unprofitable one for the butcher.

Of all the requirements mentioned above, none is less clearly understood than that of quality, and hence a few sentences in regard to this may not be amiss. The term quality as applied to the living animal refers to the fineness of bone, soft mellow hide, fine silky hair and a general smoothness of fleshing throughout. Nowhere is it more clearly reflected than in the head, in which a moderate size, good proportions, a clean cut appearance and freedom from any beefiness or puffiness below the eyes are all indications. Such attributes as a very rough, heavy frame, coarse joints, prominent, ragged hips, rough open shoulders, a thick, harsh-handling hide, with coarse dry hair are among the most pronounced evidences of deficiency in this particular.

While these evidences of quality are always desirable from the butcher's standpoint, it not infrequently happens that animals of great quality border on delicacy, and hence do not make as good feeders as some that are deficient in this particular. Of this the feeder must beware. Where quality and size and stamina can be conbined, then we have an ideal animal. But quality alone without depth and thickness of form does not make a good feeder's animal, and, while we do not like to see any great deficiency in this respect, yet we would prefer an animal that may be a little too heavy in bone or a little too prominent at the hip bones or shoulder blades to one which, having all the requisites of quality, is a rather delicate feeder.

We have referred at considerable length to the demands of the markets for young steers because of their producing a class of meat of better quality and better adapted to the tastes of their customers. Those who in years gone by were accustomed to the huge, cumbersome, four and five year old steers weighing a ton or more, might be inclined to think that, in catering to the demands for smaller steers, the feeder is surely losing money. But such is not the case, for we can quote numerous experiments of our best feeders to prove that feed goes much farther, and gains are made much more cheaply with young than with older steers, and hence the earlier that they can be put on the market the better. This fact was particularly well illustrated by records kept at the Fat Stock Show in Chicago in 1882. For this show a record was kept of the cost of producing 100 pounds of gain on steers of various ages up to three years and from the table presented below it will be observed that the cost increased very materially with the increasing age of the steers.

Cost of 100 lbs. gain with steers of different ages:

1 to 12 months old.		12 to 24 months old.		24 to 36 months old.	
No. of animals.	Cost of food.	No. of animals.	Cost of food.	No. of animals.	Cost of food.
9	$ c. 4 03	5	$ c. 7 98	2	$ c. 12 54

Steers older than three years were not shown, and therefore no records of such were kept, but, had they been, it would have been found that the cost of food for the following months would have been still higher. The feeder and butcher are, therefore, at one in regard to early maturity, as well as in regard to the other points we have discussed.

There are several other questions touching the common interests of the feeder and butcher, but of these none is of more vital importance than the degree of finish to which a fattening steer or heifer should be brought. This is one of the problems which our fat stock shows have tried to solve for the people, and, so far, it must be said, with only fair success. Some markets, especially our local ones, seem to be satisfied with beef that is rather on the thin than the fat side, and in many cases, where local butchers have been appointed as judges at fat stock shows, under-done carcasses have accordingly been awarded the premiums. The best markets in the world, however, such as the ones to which we have referred above, while not demanding over-fat carcasses, yet require rather highly finished ones, and will pay correspondingly higher prices for them. It seems to be in this particular of finish more than anything else that Canadian steers fail in the English markets, and to which, therefore, a great deal of attention should be paid. Now every feeder knows that it costs much more to put on the last hundred pounds than any of the earlier gains, and that it requires much more skill to keep the steer in good condition during this stage than in any previous stage. As a consequence the temptation to part with steers before they are quite finished is very great, and especially so if the buyer, to whom the steers are sold, does not discriminate very closely with regard to the prices paid for steers of varying quality and finish. In the writer's opinion the principal reason why the United States' steers are superior in this respect to ours lies largely in this fact: that the greater number of the beef animals there, are marketed at large stock yards, such as Chicago, Kansas City, and elsewhere, where discriminating buyers in keen competition with each other, sometimes pay as high as $2 to $3 per hundred more for well finished steers than for poorly finished ones. Perhaps the establishment of similar stock yards, which will educate the farmer through his pocket, will prove the best means of influencing our feeders to bring their cattle to a higher degree of finish, and will thus gain for Canadian cattle a prestige in the old country markets, which they do not at present hold. It is almost impossible to describe in words just the finish that will bring the highest prices in these markets, but we would strongly recommend every one interested in the subject to attend the fat stock shows and make an especial study of the "block test." The importance of the subject can scarcely be over-estimated.

It is a comparatively easy task to recognize all these desirable features, which we have discussed, in the finished steer. The greatest skill, however, is required in getting a class of calves, and selecting a class of store or stock cattle that will mature profitably into the form and quality that will command the highest price on the market. Here it is that the value of a pure-bred bull of any of the recognized beef breeds shows itself. Prob-

ably almost every feeder, who reads this article, has had experience with stockers bought from sections where good bulls were used, as well as with stockers from sections where little attention was paid to the class of bulls used, and no doubt such experience has proved, better than any words, that one could afford to pay considerably more for the former than the latter and still make more profit. It was in this very way that Robert Colling's attention was first called to the famous bull Hubback that did so much in laying the foundation for the modern Shorthorn breed.

The most satisfactory feeders are generally to be obtained when a man raises his own calves for this purpose. Under these circumstances, attention can be paid both to the sire and dam of the calf and "blood will tell." The dams need not necessarily be pure-bred. Common Canadian cows are in most cases good enough. At the same time the more attention that is paid to the selection and breeding of these, the better. In all cases the cows should possess good constitutional vigor and roominess, and should be possessed of good, strong, though not coarse, bone. The best results are not as a rule obtained from the largest cows, as these are often times too coarse, and produce calves with the same failing. Medium sized cows that make up for lack in size by extra quality, will prove the most satisfactory. The sire should invariably be pure-bred and should indicate both in individuality and pedigree that he is an early maturer and possesses an aptitude to feed well and lay on flesh rapidly. It is not in the compass of this article to discuss minutely the desirable points of such a bull. The best descriptions are to be had by visiting the agricultural exhibitions and fairs, where living examples are to be seen and examined. The calves should preferably be dropped in the fall, so that they may be ready for market two years from the following spring, *i.e.*, when they are two and a half years old. Conditions will, however, vary, and, especially where cattle are finished off on grass, calves dropped at seasons of the year other than the fall may perhaps suit equally well.

Although it is true that the most satisfactory feeders are generally to be had by breeding them, yet many farmers are so circumstanced that they cannot do this, and therefore buy store cattle or stockers, which they feed for varying periods of from three to six months and then sell. It requires much experience and a well-trained eye to select the class of stockers that will prove the best feeders, and at the same time mature into the most desirable form. But there are certain types of cattle that will not feed satisfactorily, and with which, therefore, the feeder should acquaint himself. A dairy-bred steer, for example, with its narrow back, wedge-shaped shoulders, and light hind-quarters, is never a good type to feed. The buyer will invariably discriminate against such a steer and pay a very much lower price for him than for one of the approved beef type. There are also many native-bred steers possessing more or less the conformation described above, which, on account of narrow chests, or flat ribs, or rough, coarse shoulders and hip bones, are equally unprofitable feeders. The good stocker being comparatively thin in flesh, and temporarily lacking the thick covering of the back and ribs of the finished animal, can never appeal to the eye as he will after a few months' feeding, but he should nevertheless present a blocky frame, stoutness of build, accompanied by short, straight legs, wide back and loin, well-sprung ribs, fullness back of shoulders and in flanks, prominent brisket, full neck-vein, wide chest, and well rounded barrel, together with a good, soft, mellow-handling skin and fine silky hair, giving what is termed the thick, mossy coat, without coarseness, and with it all a good, strong, vigorous head, clear, full eye, and quiet temperament. Experience will teach the eye to recognize these qualities at a glance, a

thing which must be learned, for in buying a large bunch of steers, it will be found impossible to study each one very minutely. The man who by close observation learns to recognize these qualities and to avoid culls, will very greatly increase his profits, and if in addition he selects a bunch that in size, quality and general appearance are very uniform, his stables will present such an appearance that he will get the highest market prices for his finished product.

All this implies close observation and study, and if with it is combined continuous good feeling, then success is sure, and when every Canadian farmer attains to that ideal our agricultural prosperity, so far as live stock is concerned, is guaranteed.

INFLUENCE OF HEREDITY IN STOCK-BREEDING.

By Dr. H. G. Reed, Georgetown.

That the characteristics of parents are transmitted to their offspring is a fact very well known to all engaged in the breeding of live stock, and yet I venture to say there are hundreds of farmers who have not given this subject sufficient thought to be fully aware of the extent to which their breeding operations are influenced by this law of heredity. Everybody knows that external conformation is hereditary; still many farmers are tempted by high prices to sell their best females and use inferior ones for breeding purposes, and thus perpetuate in their herds the very characteristics which they should try to avoid.

Disease is also well known to be strongly hereditary. Among others might be mentioned spavins, ringbones, certain forms of bluishness, roaring, etc., and no farmer who wishes to obtain the best results will use for breeding purposes an animal suffering from any of the above mentioned ailments, unless he has the best grounds for supposing they are not due to any inherited taint, but are the result of some accident such as injury, or an enormous strain upon the parts. Also, aside from any hereditary taint of disease, we have weakness of conformation which predisposes to disease; for instance, a sickle hock predisposes to curb, a long thin neck with narrow space between the lower jaw bones predisposes to roaring; weak, shelly feet, to lamanitis, etc., and a horse with any of those weaknesses of conformation, even though he may not be blemished himself because of being handled very carefully, will be very likely to reproduce his own weakness, and blemishes will result in his progeny which are not as carefully handled as himself. Again, muscular strength and endurance are hereditary, most of our race horses being descendants of three or four celebrated sires, prominent among which might be mentioned "Eclipse" and "Messenger." Longevity is well known to run in certain families. This is very well marked in the human race in which nearly every member of certain families will live to a ripe old age, and no reason can be assigned for it except that they have inherited from their ancestors some vital principles which enables them to withstand the ravages of time for a longer period than their less fortunate neighbors.

Fecundity is a well marked characteristic of certain families, while in others it is rare to find an individual with many descendants.

Early maturity, a very desirable feature, is much more marked in some families than others.

Acquired characteristics are also transmitted from parent to progeny, for instance an animal may be kept under favorable climate, and with the best care and abundant food and consequently develop into a fine well-grown

specimen of his race, especially if this treatment is kept up for several generations. The desirable qualities, which he did not have in the beginning, but which have developed in him by favorable surroundings, will have become fixed characteristics, and will be transmitted to his progeny in a very marked degree.

It is also very well known that acquired habits are transmitted from parent to offspring, in illustration of which, note the American trotting horse or the present high class dairy cow. Both of these animals are the results of persistent breeding from parents which showed an aptitude to excel in their particular line.

To sum up "Like begets like;" therefore, breed from the best, and from none but the best.

DENMARK VS. CANADA IN BACON PRODUCTION.

By Prof. G. E. Day, O. A. C., Guelph.

During the past summer, it was my privilege to visit the little country of Denmark, a country noted for the excellence of its butter, bacon and eggs. So far as my mission was concerned, I was interested mainly in the question of bacon production from the farmer's standpoint, and devoted nearly all my time to this question. I presume that everyone knows that Denmark is our most formidable rival in the production of bacon for the British market, and that Danish bacon usually commands a premium over the Canadian product of from three to four shillings per one hundred and twelve pounds. Before going to Denmark, I visited the Smithfield market in London, where I was given every opportunity to compare Danish and Canadian sides. So far as I could judge, the main advantages of the Danish bacon rested in its remarkable uniformity, and its somewhat larger proportion of lean to fat. In length of side, and in evenness of the layer of fat along the back, the best Canadian sides were quite equal, if not, in many cases, superior to the Danish, though there was a marked tendency on the part of many of the Canadian sides to run too heavy at the neck, and there was a decided lack of uniformity in the Canadian product as a whole. Having thus gratified my curiosity regarding the finished product, I started out to see what I could pick up regarding the raw material.

Denmark is a country of intensive farming. Every available foot of ground is under cultivation. Cattle are not allowed to roam at will and trample down the pasture, but are either tethered in the field or fed in the stables, and I even saw sheep tethered to stakes and disconsolately tugging at their ropes. As for the pigs, they are not tethered, but are kept closely confined, except the breeding sows, which are given a rather limited amount of exercise.

The most successful bacon factories are co-operative concerns, though there are some independent factories, and a keen competition exists between the two, with the odds in favor of co-operation. In the co-operative factories, the farmers who agree to co-operate agree to sell all the hogs they produce to their own factory, and in Denmark an agreement appears to be binding. If a farmer, tempted by a higher price, sells his hogs to another factory, he is fined between $2.50 and $3.00 for every hog so disposed of, and the enforcement of this law tends to discourage the violation of agreements. Each man's hogs are killed and graded separately, and he is paid according

to the price agreed upon for the different grades. The profits earned by the factory are divided proportionately among the interested parties at the close of each year.

The market hogs of Denmark are mostly a cross between the large Yorkshire and what is called the Danish hog. So far as I could learn no other breeds are known in the country. The Yorkshires are imported from Great Britain, and are placed in the hands of certain farmers, who agree to breed nothing but Yorkshires. These farmers receive some financial aid from the Government, and the boars are sold for crossing purposes. The Danish h g is very similar to the Yorkshire in body, bone and color, but it has a long, narrow head, very light jowl, heavy, drooping ears, and a light neck and shoulder. It has the reputation of possessing a stronger constitution and of being an easier feeder than the Yorkshire. It is more than probable that the Danish hog already possesses considerable Yorkshire blood. The reason assigned for crossing with the Yorkshire was that the cross-breds gave thicker and more fleshy sides, particularly the belly meat. It is here where the Danes score a great advantage over us. From their method of breeding, it naturally follows that their sides of bacon should be remarkably uniform in character, and one of the great faults of Canadian bacon is its lack of uniformity.

The methods of feeding vary in different localities. Barley and oats are used to a considerable extent, and in some sections corn is used, though it is strongly condemmed by the packers. Roots and green foods are also used, but perhaps the most important foods for producing bacon of choice quality are skimmilk and buttermilk. Nothing but dairy cattle are kept in Denmark, and butter is the product manufactured. As a result, every farmer has a supply of skimmilk and buttermilk for his hogs, and in this we can see a second important advantage which the Dane possesses over the Canadian feeder, for there is no food equal to these by-products of the creamery for producing bacon of high quality. There is no doubt that the method of feeding plays an important part in promoting the development of lean meat in spite of the lack of exercise, though it is quite probable that the method of breeding also has an influence.

A third important advantage possessed by the Danes is their proximity to the market. In less than forty-eight hours after the bacon is pla ed on the cars, the bacon is on the British market. The advantages accruing from such conditions can be easily understood.

With all these conditions against us, the question naturally arises, are we engaging in a hopeless competition, and will not the Danes eventually drive us out of the market? But there is another side of the question which I would like to present. At the time of my visit, the farmers were receiving at the factory a little over six and a quarter cents per pound, live weight, for their hogs, and they were complaining bitterly that the price was not high enough. The best authorities agreed in placing the cost of production at six cents per pound, live weight. In addition to this fact, a number of recently-constructed factories in Denmark have failed, and others are running at a loss, not being able to obtain enough hogs to make the business profitable. When these two facts are considered together, the reasonable inference is that as soon as the price of hogs drops to the neighborhood of six cents per pound, the Danish farmer curtails his operations, and fewer hogs are fed for market; and that unless a cheaper method of feeding is discovered, the Danes are not likely to increase their exports of bacon. In other words, it looks very much as though the Danes had very nearly reached their limit in the production of bacon, for the present at least. I need not

say that Canadian farmers can make money at six cents per pound for their hogs, and it is right here where we score a very important advantage over the Danes.

Thus, against the advantages of uniformity, abundance of creamery by-products, and closeness to market, we have the greater advantage of cheaper foods; but we must not grow careless on this account, for the chances are that we will have to face more serious competition from other countries in the near future. If, and I would like to emphasize that word "if"—if we pay attention to the breeding of hogs of proper type, and also pay reasonable attention to feeding, I can see no good reason why we should not successfully compete with any country in the world, but if we grow careless and wilfully close our eyes to what is going on about us, we may find, some fine day, that we no longer occupy a position of any importance in the British market. We have a good fighting chance at the present time, and it remains to be seen whether we will rise to the occasion.

BREEDING AND FEEDING FOR BACON.

By G. H. Hutton, Easton's Corners.

While much has been said and written in regard to the importance of improving our type of bacon hogs, there is still in many parts of the Province great room for improvement. To many farmers the bacon hog is one of the chief sources of income, and where dairying is conducted as extensively as it is in the east, there is room for great increase, since no two lines of operation fit in better with each other than the production of milk for cheese and butter, and the raising of hogs for bacon.

The export trade determines the price received for all hogs, not only those exported but also those consumed at home. Seventy-five per cent. of all hogs reared is exported, while the remaining twenty-five per cent. is sufficient to supply the home demand.

Manifestly then, the aim of every farmer should be to produce the article bringing the highest price on the market. Since the "Wiltshire" is the side of bacon which meets with the greatest favor among British consumers, and since the cost of its production is no greater than that of an inferior quality, there is nothing to be said against a general effort on the part of Canadian breeders to reach the English standard. In some sections of the Province pork is a higher price than in others owing to the fact that a better class of hogs are found in those sections bringing keener competition among buyers.

Perhaps the fact that a greater immediate return is to be realized from the hog of the proper type which costs no more to feed, yet which brings more on the market, is the view point which appeals with the greatest force to the average man. The question presents another phase, however, of even greater moment than the former.

We are not alone in seeking dominance in the British Market. Denmark and Ireland with equal facilities for the production of bacon and a nearer market are awake to the possibilities of profit in supplying this great market with a good article. Their success in the past shows us what may be accomplished, and points us the way—"Up Canada and do likewise!" Their successes in the past, and the present position they hold, plainly say that if we do not do likewise we shall find ourselves without a market wherein to dispose of our twenty million dollars of output.

Extensive experiments conducted at the Ontario Agricultural College have proven that breeds giving the largest number of "Wiltshire" sides have produced 100 pounds gain at less cost than breeds of lower merit as bacon producers. The breeds leading as bacon producers, judged by the Wm. Davies Co., are found to be the Yorkshire, Tamworth, and Berkshire; these tests are conclusive, and it will pay to breed along the lines suggested by them.

Breed hogs of strong constitution indicated by broad chest, full heart, and general character; jowl not flabby, neck of medium length, smoothly blending into shoulder which should not be heavy or rough on the side nor high on top. Many hogs are undesirable owing to heavy flat shoulder, and any side running over 1 3-4 inches of fat along the side is discarded, at least for the "Wiltshire" class. The ribs should be well sprung and strong of good length so that flesh may be carried well down giving a straight well filled underline; the loin strong and full having an abundance of muscle, for muscle here is money; the ham of good size and fleshed well down on the hock. Looking along the hog, the body should be of good width and uniform throughout, from a side view a back slightly arched with a slight underline, flanks well filled, all this together with great length of body.

In the treatment of young pigs, care should be taken when approaching the weaning period to have castrating done, and pigs should be taught to eat freely by themselves there is then no check in growth when pigs are removed from their mother.

Shorts, oil cake, and whey make a good food for young stock, being careful always to supply green food or roots then and at all subsequent stages of their growth.

Light, dry, and well-ventilated pens sufficiently warm to prevent freezing in coldest winter days are necessary to greatest profit.

In feeding grains better results will be had from a grain mixture than from any one grain fed singly, and on no account should corn be fed exclusively. By the use of whey, skim milk, roots in winter, and clover and rape in summer the tendency to produce soft bacon will be overcome, provided the proper type is being fitted. I do not believe that the most judicious feeding can overcome bad type and produce bacon therefrom. I maintain that the solution of this problem is first a matter of wise selection and breeding, and next of judicious feeding. Then the cry shall cease that from our shores come so much soft and inferior bacon, and the Canadian product shall be elevated to the proud position of being equal with the best upon the British market. The practical benefit of such a position would be realized by the one hundred and seventy-five thousand farmers of this Province in largely increased clear profit from this already profitable industry.

Q. Will rape seed the year sown?

A. G. H. Hutton, Easton's Corners. No, dwarf Essex rape will not seed in our climate. Be sure not to get what is known as Bird Seed rape for it is useless as feed and becomes a weed.

Q. Do hogs relish rape?

A. Yes, for shoats of 60 lbs. up to hogs weighing 150 lbs there is no green food on which they do better and none which supplies a cheaper ration.

Q. How is it sown?

A. Rape may be sown either broadcast or in drills, the latter giving the best satisfaction as a rule, since this method allows of more general cultivation and the stock injuring less when pasturing as they pass between the drills. Sow 2 lbs. to the acre in drills 30 inches apart.

Q. Is it a nutritious food?

A. Yes, it is equal to clover having a nutritious ration or 1:5.6 and yields on the average 16 tons of green fodder to the acre.

Q. What proportion of roots and grain do you recommend?

A. Seed pound for pound of roots and grai .

Q. Is it best to cut roots?

A. I do not think it necessary if feeding turnips, especially if after pigs have become accustomed to mangels or sugar beets. It would be necessary to cut and sprinkle provender on them to get the hogs to eat them.

Q. At what age would you recommend weaning?

A. Wean pigs in spring at about six weeks old, and in fall not before eight weeks old.

Q. Give some points in selection of a brood sow?

A. The young sow should be selected from a mother of good bacon type and one which has given large litters which have developed uniformly. She should have twelve developed teats as a further indication of fecundity. She should give evidence of a strong constitution in large heart girth and well-sprung ribs and a back of great strength that will not weaken under prolonged breeding. She should possess all these points as well as the general characteristics of a bacon hog.

Q. What are some causes of soft bacon?

A. Soft bacon is caused from lack of exercise, heavy feeding of corn, feeding grain without roots or green food, forcing too fast holding them on slack feed, waiting for an advance in price after they are ready for the market. All these cause soft bacon as well as any unthriftiness of the hogs.

SELECTING, BREEDING, AND CARE OF SHEEP.

By W. J. Westington, Plainville.

From the early history of man sheep-raising as a source of profit has marked its annals down to the present time, and it appears that each decade of late makes a further mark in the improvement of our flocks. This has required and still calls for scientific study with experience in order to keep up that standard of excellence which has already been achieved in the various breeds of our sheep.

We certainly should become more and more convinced of the fact that more attention must be paid to our flocks and herds, as we can no longer depend upon grain-growing alone. The raising and feeding of live-stock must therefore take a foremost place in our agricultural pursuits as our soil has become partially worn out and nothing can restore it to its former fertility so quickly as the keeping of sheep. The philosopher was justified in saying "The sheep has a golden hoof."

This fair Province of Ontario has already won for itself a reputation which it is hard to equal for the superior quality of its sheep. It is also acknowledged to be the breeding-ground of the continent of North America, its climate, soil, grasses, grains, and roots being specially adapted for that purpose.

We cannot afford to breed in a haphazard way. It is necessary to breed along some distinct line, according to our circumstances and surroundings. For instance, the lighter breeds, such as the Downs, will do better on poor, dry, light lands than the heavier breeds, such as Cotswolds, Lincolns, or Leicester. These latter breeds require the range of better pasture land.

While we can improve upon the native scrub with sires of prepotent power, yet we feel that life is too short to attempt to breed up to the perfection that has characterized the pure-bred which so largely possess the quali-

ties of both wool and mutton so much desired for the use of man. But we would advise purchasing from some reputed breeder a few choice ewes (ot necessarily prize-winners) of the breed he fancies, not too large nor yet too small, not too compact nor yet too roomy, with a good strong loin and with smooth full and broad back; good at girth, prominent, broad deep chest; with well-sprung deep ribs, heavy flank, and broad well-formed quarters.

The head should have a effeminate, modest appearance, with full, mild eye and open nostrils, neck rather short and well set on shoulders with a crest, thus giving an airy appearance. The body should be evenly fleshed, with a mellow skin covered with abundance of all wool free from any appearance of hair, not even on the thighs. The limbs should be well-formed and moderately short.

Then select a ram showing masculinity or a good strong head without coarseness; the neck should be short and thick yet arched and full where joined to the shoulders. These points are indicative of strong character. The body should be more compact than that of the ewe, with short well-formed straight legs, and good strong pasterns, as you will readily see, differing in some of these respects from the female. He should be active showing great vitality. A shearling is most desirable though a good strong lamb is to be preferred to an old worn-out, over-fed prize winner.

We should in all cases select for breeding purposes the choicest of the ewe lambs (the culls going to the butcher) with as much uniformity as possible, so as to form a family distinct in appearance from any other, and thus know them from your neighbors' sheep without disfiguring the ears or otherwise marking them with daubs of paint. They should not be allowed to reproduce until two years old, and not later than five years old, as the lambs of the aged and weak may have a deteriorating effect upon the flock. If, unfortunately, you have introduced a sire whose progeny is undesirable, the better way to make amends is to sell him to the butcher with all his gets, as this would be a sure way of removing the bad blood at its first appearance, instead of trying to breed it out, as such will repeat itself after many generations.

To make sheep-husbandry a success, we should watch, not only the breeding, but also the feeding, with the greatest care, supplying plenty of fresh water the year round. Juicy and succulent food is also required to keep them in a healthy condition. This may be had in the Autumn season when the pasture is dry, by allowing them to feed on rape, turning them on when the leaves are dry.

A few turnips in Winter will also be a stimulus to them. They should be fed plenty of well-saved pea-straw with a little whole oats or a few unthreshed peas and clover hay once a day. And after lambing a little bran with roots should be added to the ration, so as to supply plenty of milk for their offspring. The lambs should be taught to eat bran, oats, cabbage or sliced turnips as quickly as possible, in order to stimulate growth and prepare them for the early market or for exhibition purposes. Sheep should have access to salt, as it is essential to good health. A little sulphur added will destroy the ticks which are so troublesome and injurious to them. They should also have plenty of exercise, it being natural for them to roam, with dry and comfortable quarters or sheep-pens which need not be expensive. This might be a frame building double boarded with felt paper between, the outer boards being matched and painted to keep out the wind, with hay-loft and feed-room in the same building. It should be partitioned to meet the requirements of dividing the flock as may be desired from time to time. The rams should be kept by themselves. The apartments should have a

goodly number of windows to admit abundance of sunlight which is essential to health and comfort. They should also be well ventilated but practically free from draught, with a ceiling fully eight feet high for air space, and with wide door ways for ingress and egress to prevent injury from crowding. Proper racks and troughs should be supplied, a high close woven-wire fence surrounding the yard would prevent the destruction of the sheep by the useless prowling dogs that infest our land. The cruel practice of washing sheep should be abandoned, for serious loss frequently ensues by taking cold and dying, as well as loss of time in this respect. In fact, they should always be treated kindly, as they are of a nervous disposition.

Notwithstanding, we would advise docking short while young and trimming before placing on the market, as it adds materially to their appearance and comfort.

In summing up, we believe few farms are complete without them, as they will thrive on the waste-places of the earth where the cow or horse could not subsist, and will also partake of a greater diversity of food than almost any other animal, thus eradicating from the farm many noxious weeds, and turning the same into wool and mutton. The production of these feeds otherwise would be lost, and worse, would be detrimental to the other growing crops.

Since this branch of mixed farming is so profitable, and requires so little care and labor, which has become so very expensive in recent years, it is evident that greater attention should be paid to this important factor of stock-raising which so largely supplies both food and raiment for man, as a number of sheep will bring in a return in money to a more or less extent the year round, through their fleece and nutritious meat production.

INCUBATORS.

By F. C. Elford, Department of Agriculture, Ottawa.

There is considerable being said about incubators these days. People are wondering if it will pay them to buy one, and if so what should be the capacity, make, etc. If they do invest will they be able to run it? And will the incubator chicks be as healthy and thrifty as the hen-hatched chick.

Some of these questions can be answered satisfactorily; others are not so easy to settle, but they all show that interest is being awakened or increased in this promising industry. A good deal depends upon our intentions and conditions, as to whether it will pay to buy an incubator. If we intend to raise no more chicks than usual, say from 50 to 150, I do not know that it would pay. Some people have had very good success in utilizing the old hen as an incubator, and probably after she has gone through the operation every season for several years, she becomes an expert, though I think the incubator does more efficient work than the average hen, and for my own part, if I were going to raise 50 chicks I would have a small machine. I would rather look after a fifty-egg machine than oversee two or three setting hens. I have tried both, and I invariably lose more eggs and patience with the latter than I do with the former. If, however, chicks into the hundreds are wanted, I would not hesitate a minute in saying that an incubator would pay.

In purchasing a machine I would not do so simply on the recommendation of the manufacturers. If possible I would see some one who had run the machine, or at least some one whose practical judgment was reliable. Do

not buy a cheap machine because it is cheap. It will probably make you feel cheap yourself. Get a good, reliable make. A few dollars in the first cost will be more than made up in the results. Though an incubator is not a plaything, and should not be left to children to handle, still any competent person can manage it. One of the first things is to learn to follow the directions. Some people imagine they can improve on the directions sent with the machine, but in all probability the firm that makes the machine knows more about it than the purchaser.

Do not expect an incubator to bring live, healthy chicks out of infertile eggs or eggs that have been chilled; but if you put fresh, fertile eggs in and follow closely the directions, you may expect probably from seventy to ninety per cent. of the fertile eggs to hatch. These chicks, to say the least, will not inherit any disease or vermin from the mother, but with proper care and brooding will do as well as any hen-hatched chickens could do.

Be sure you have eggs from good stock for your purpose; feed and finish the fowl if possible; never put an inferior article on the market; and you will not have any difficulty in selling at remunerative prices.

THE PRODUCTION AND CARE OF MILK FOR CITY SUPPLY.

By John Hope, Merton.

Perhaps there is no line of farming that requires more study, forethought, and care, than that of milk production for city supply.

With the rapid growth of population in our cities, there is an increasing demand for milk for this trade, and it should be the aim of every producer to meet this demand with a first-class article. When we reflect that milk is the most perishable article produced on the farm, and that sometimes it is two days from the time it is drawn from the cow until it reaches the consumer's table, we see the necessity of the utmost care in feeding the stock, and caring for the milk, if we would put a satisfactory article in the hands of the retailer to supply his customers.

To be a successful producer, we need to have a stable of first-class cows, and we have found it more profitable to raise our own cows than to buy, because we can select calves from the best cows for this purpose. The stable should be kept thoroughly clean, well lighted and ventilated, and comfortably warm. It should never reach the freezing point in winter. The cow herself should be kept comfortable and clean, and she will repay this care.

It is most important that she should be fed regularly if you would have the best results. The feed should be clean and wholesome, and the objections of the dealer as to certain kinds of feed should be respected as much as possible. As to the feed, the producer has to use to the best advantage what he has, but we have found clover hay uncut, and roots with cut straw as roughage, and a grain ration of ground oats, barley and bran, equal parts, to be a good ration for producing a good wholesome article of milk.

Now, after feeding to produce good milk, it seems a pity that it should be spoiled just by lack of care, as, I am afraid, is too often the case. Care is the first essential to success, hence we should strive to have our cows and their surroundings as clean as possible. Before beginning to milk, the side and flank next the milker should be brushed off, and the udder well rubbed with a coarse cloth to remove everything that would be likely to drop into the pail while milking, as it is just milk you want in the pail and nothing else.

The milker should have clean hands, and a clean, well scalded, well-aired tin pail. Never use a wooden pail for this purpose.

As soon as the milk is drawn from the cow it should be taken immediately to the milk room, which should be convenient to the stable, but shut off from all stable odors, and supplied with plenty of pure air. The room itself should be clean and well ventilated, and should be equipped with a thermometer, an aerator, and a milk vat.

When the milk is taken to the milk room, it should be poured at once into the receiving pail of the aerator. The receiver should have two thicknesses of cheese cloth tied over it, and the can into which the milk runs from the aerator, should have four thicknesses of the same material over it, thus making six thicknesses through which the milk goes. In summer, the aerator should be filled with water and ice. As soon as the can is full, if you have used ice, the milk will be down to 60 degrees. The can should be immediately set into the cooling vat, in which there should be enough ice to reduce the temperature to 40 degrees in hot weather, and not higher than 50 degrees at any time.

As soon as all milking is done, if it is evening, the milk should be well stirred before leaving, and about an hour afterwards it should again be stirred, and if you have used plenty of ice your milk will then be able to stand some pretty hot weather.

The same rule of milking and care should prevail in the morning, but the first thing to do in the morning is to give the previous night's milk a good stirring. It will then be ready to ship. If the morning's milk is to ship, get it into the vat as soon as the can comes from the aerator, and by the time you are ready to load up it will be down to 50 degrees.

One reason for emphasizing rapid cooling, is that it has been shown by actual demonstration, that in milk held at a temperature of 50 degrees, one bacterium increased five times in 24 hours, while in the same milk at 70 degrees, the increase was 750. So the inference is, that the sooner the low temperature can be reached, the more likelihood there is of it keeping for a longer period. At any rate, milk if handled in this way will be satisfactory to the dealer and consumer, and this should be our aim, just to furnish such an article. There is no reason why the producer should not be able to ship for a whole year without having a can spoiled. The fact remains, however, that hundreds of cans of milk are lost every year in the city of Toronto alone, through lack of care, thereby causing a loss of hundreds of dollars to the producer, and dissatisfaction and vexation to both dealer and consumer.

We might go further and say, if the patrons of our creameries would follow to a man the routine of handling milk as outlined in this article, it would result in Canada largely increasing her butter export trade and taking her place abreast, if not ahead, of the best on the British market, thereby commanding higher prices, and vastly increasing the producer's profits. But as long as the farmers themselves are indifferent to the great necessity of absolute cleanliness and care of this product, the creamery man need hardly expect to export a first-class article. Of course all producers are not to blame in this respect, but all are made to suffer for the other's carelessness.

We close this article with a few suggestions it would be well to remember: —

I. Feed liberally good wholesome food. Remember, that he who feeds sparingly, shall also milk sparingly.

II. Have a good supply of ice and use it freely.

III. It is very important that the water should be as high outside the can as the milk is inside, while it is in the vat. Neglect of this has spoiled many a can of milk.

IV. Never let the vat be without ice in summer.

V. Never use a stick to stir milk, nor a wooden pail to milk into.

VI. Remember you can't take temperature with your fingers. Use a thermometer. They only cost 25c.

VII. Give extra attention to care of milk at change of winter to summer, and of summer to winter. Change of feed has a direct influence on the milk product.

VIII. Always inspect milk before closing down cans for shipping. If you find anything wrong, don't ship it.

IX. In summer, always cover cans with a cloth while hauling to point of shipment.

X. Remember that personal care and oversight often saves a great deal of vexation and loss.

XI. Last of all, remember that eternal vigilance in every detail is the price of success in the production and care of milk, not only for city supply, but for all other purposes as well.

DAIRYING FOR PROFIT.

By L. E. Annis, Scarboro.

The first thing to do in order to make money by producing milk for the city trade is to get the proper dairy cow. It is advisable to raise some of the best heifer calves from the best cows, cows that give a large flow of rich milk and are persistent milkers. The heifers should be from a sire of a well-developed dairy type of any of the well-known pure breeds, and of good size. Keep these calves growing from birth, but do not keep them too fat. At eighteen months old breed them, and two weeks before calving time see that they get but little strong feed and keep the bowels loose. When the calf is dropped, if all is well, allow the cow to remain quiet and do not milk her for six hours, and then only take away some from each teat simply to relieve the udder. Give luke-warm water to drink for two days with only light feed until the milking is well established. Do not breed the cow again for five months, and then keep her milking for twelve months, and you have set the pace for the future.

But for the city milk trade it will be necessary to add frequently to the herd by buying fresh cows as occasion demands. In buying a milch cow we look first for size. We want a cow with large digestive capacity and good constitution, with bright prominent eyes well apart, fine head, clean throat, neck broad and deep through the lungs, coming well down to the udder, short clean legs and fine tail, with long ribs joining the spine at a sharp angle something like the peak of a barn, with a decided roughness along the spine, a loose skin with a fine hair, hind legs well apart with the udder well up behind and continuing forward, with the teats forward and well apart.

Having the cow, we must put her in comfortable quarters. Whether a basement or wooden stable let the ceiling be high with lots of light, and warm, with good ventilation. A very nice method is open space boxes connecting the ceiling of the stable with the peak of the barn, the current of air always being upward. We want to keep our cows comfortable at all times with some freedom in the stall and a good bed. It is necessary to

become personally acquainted with each cow's capacity, record and disposition, her health, her troubles. Examine the gutter carefully as well as the mangers.

Feed. For an ordinary milker per day, with variations according to ability to digest and length of period of milking, etc., 35 lbs. ensilage, 25 lbs. mangels, 10 lbs. clover hay, 10 lbs. meal (made up of 5 pecks oats, 2 pecks barley, 1 peck goose wheat, mixed and ground in these proportions), all the loose straw they can mouth over, with 2 ounces of salt daily in the feed, with an abundance of good water in the stable available at all times. It is well if a person can grow all the feed necessary on his own farm, rather than buying bran or corn at the present prevailing prices, but if it is found necessary to purchase, then bran is a good supplement, as is brewery grains if they can be packed away and fed fresh and sweet. Clover hay is almost indispensable on a dairy farm, and it is a good foundation on which to grow ensilage corn as well as all the other crops.

Milk the cows with vigor, be punctual, regular, kind, and thorough in your milking, and when you have finished milking a cow stop at once. A cow should have a rest of six weeks after drying up before she freshens again. We cannot afford to keep unprofitable boarders in our cow stables. If a cow is not paying let her go to the butcher. It is a great mistake to keep a cow that is not of the very best. Cull out, or weed out, feed liberally the year round, and the unprofitable ones will show it by putting on beef. Let them go, but do not let the good milkers get thin in flesh; if they do there is something wrong. They are either sick or you are not feeding them up to their capacity. It does not pay to allow heavy milking cows to stand around a barn-yard during winter months, but it does pay to have an abundance of feed on hand to keep the cows milking well during the hot dry seasons of summer as well as during the cold spells of winter. It is advisable to have meal and green feed or ensilage for the cows during the whole of the summer months, for if you allow the milk flow to decrease it costs too much to get back the full flow again.

Keep the milk closed in from any bad odors in the stable or out of the stable, as it is very sensitive to anything unpleasant. See that the strainer cloths, cans, pails. etc., are kept scrupulously clean, and for the city trade the milk must be thoroughly chilled while being stirred. A plunger dipper is found to be a very satisfactory implement.

THE CARE OF MILK FROM COW TO FACTORY.

By R. C. Fowler, Emerald.

Now that dairying has become such an important branch of Agriculture in Ontario, perhaps no more profitable or more interesting subject could be discussed than the care of milk.

We know that during the hot season certain changes take place in the milk which renders it unfit for manufacture. If we are to prevent these changes taking place we must start at the foundation and find out the cause of the change.

There are three causes for these changes. Two of them are very well known, but the third and most important one is very far from being understood by the average agriculturist. This one it is my purpose to lay most stress upon.

First, food taints. Certain foods such as turnips, rape, leeks, etc., contain large quantities of volatile oils. These volatile oils are so pene-

trating, that they force their way through the tissues of the animal body and find their way into the udder of the cow, where they mix with the milk, imparting to it their strong repulsive odor, rendering it unfit for human food. Some feeders claim to be able to feed turnips, rape, etc., at certain times of the day so as not to injure the flavor of the milk. I am not prepared to give them a direct contradiction, but I am prepared to say that it is a very dangerous practice, and one that is entirely unnecessary. We should not persist in feeding turnips, which we know to contain this volatile oil, when the mangel is just as good a food, and will not taint the milk.

Second, absorption of odors from the air. Milk, as you well know, absorbs odors from the air very readily. It is, therefore, most important that milk should not be left standing where it is exposed to any strong odor, such as the smell of a not very clean stable, a pig pen or a dirty whey tub.

The third, and as I said before, the most important, and the one we know least about, is what is known as bacterial changes. These changes, such as the souring of milk, the production of gas, sweet curdling, etc., are brought about by tiny plants, which grow in the milk, taking certain parts of the milk for their food and throwing off from their bodies an entirely different substance which is the cause of our trouble. These tiny plants are so small that we cannot see them with the naked eye at all. They can only be seen and studied by means of a strong magnifying glass or microscope. They were discovered by a Dutchman named Von Leunhock about the year 1875. He was a grinder of lenses and by making improved lenses and forming combinations of them he discovered a form of life more minute than anything that had been known before. At first this was supposed to be animal life and was considered such for some time. The importance of these tiny organisms was not at first realized, so the study of them was to some extent dropped. Later on it was taken up by the medical profession, as some of these tiny forms of life were found to produce certain diseases. Their connection with disease, and the belief that they were animal life, gave them a bad reputation. As lenses have been improved, and the microscope perfected, it has been clearly established that these organisms are one-celled plants. One would think that such tiny plants could not do any possible harm, but the scientist has proven that they can. He finds that although so small, they multiply with great rapidity. One plant or germ as it is called being able to reproduce every twenty minutes or half an hour in favorable conditions. This multiplication takes place in two ways: by budding and by fission or division. In some species a bud starts from the side of the germ and grows till it is the size of the parent germ, then breaks off, and in its turn throws out another bud. In fission the germ enlarges and a wall is formed across the middle, when it breaks apart, forming two separate plants each having the power of dividing again.

We said these germs are plants, and, like plants of the higher orders, they are beneficial and useful species or weeds. If we were to have our choice to be with or without these tiny plants we would be forced to elect to have them, for we could not get along without some of the kinds at all. The raising of bread is brought about by one of these tiny germs, the yeast plant. The souring of milk and cream necessary for the manufacture of cheese and butter is brought about by germs. Perhaps the most important work performed by these tiny microscopic plants is the taking of free nitrogen from the air and storing it in the roots of peas, beans, clovers and other leguminous plants, not only for their use, but for the use of other plants which follow them. Nitrogen, as you no doubt know, is a very expensive plant food, but by means of these germs the crops obtain it very cheaply. Some germs like weeds are very harmful. Among these we find those causing consumption, asthma, lock-jaw, blood poisoning, etc.

In milk, this germ life is responsible for sweet curdling, souring of milk, red coloration, sometimes mistaken for blood, and that frequent and most annoying trouble, gassy milk, as well as many other unfavorable conditions.

It is necessary to understand germ life more now than formerly, because it is increasing. As dairying has advanced in the country, these germs have found the conditions necessary for their growth, so they have kept on increasing, and will keep on increasing still further if we do not exert ourselves to prevent them.

Like the plants of other orders, these tiny germs or bacteria have certain conditions favorable to their growth. First a suitable and adequate food supply; second a suitable amount of moisture amounting to about 20 per cent. of the medium in which they grow; thirdly, a suitable temperature.

In milk, for that is the substance we are dealing with, we cannot regulate the food supply, nor can we regulate the moisture. We have, however, one means of controlling germ life through the temperature. We can have our milk at almost any temperature we wish. The scientist again comes to our assistance, for he has experimented and found out just what the temperature is most suitable for the growth of these tiny plants, and at what temperature they will not grow. He found out that the most rapid changes took place at about body heat or 98 degrees Fahrenheit. He tried raising the temperature and found that growth continued rapid till about 120 degrees was reached, when some of the weaker plants were killed. As the temperature was raised, growth became less till it ceased altogether at 160 degrees. If held thus for twenty minutes while at 180 degrees F., germ life is entirely destroyed. This, however, is not practicable on the farm. He now tried lowering the temperature. When the milk was cooled to 70 degrees F. the growth was perceptibly slackened, when 60 degrees was reached growth was quite slow, and when reduced to 40 degrees had ceased altogether. He went still further and froze the milk into solid ice, kept it in that state for several months and heated up to 90 degrees, when it was found that life started again just as if it had never has been interrupted. This proves conclusively that cold will not kill germs, but it will retard their growth.

We said that we could not regulate the moisture in milk, yet it is important that we should know the effect on germ life. Germs to thrive, must be in a substance containing twenty per cent. or more of moisture. The scientist in his research along this line dried the substance up to a powder, by prolonged but comparatively low temperature, and it was found that although germ life did not increase while in the dry state it went on increasing as soon as the sufficient amount of moisture was supplied. This is important as it shows that these tiny plants may be carried in the dust. We must remember that these germs are so minute they cannot be seen by the naked eye at all, so that several of them may be carried on a particle of dust such as we see floating in the air where the direct rays of the sun come through a knot hole or chink in the window-shutter.

As the production of gas in our milk is one of the most frequent and annoying troubles, we will give a little special study to the germ that is the cause of it, the *Colon Bacillus*, so called because it is found in large numbers in the large intestine of the animal body, the great colon. It is therefore always found in the droppings of animals. Any particles of manure are simply filled with these gas producing germs. The droppings of animals along the road get worked up on the dust, and become dried so that road dust is a source of trouble if it gets into the milk.

What then have we learned that is of importance in the practical handling of milk? First of all that an ounce of prevention is worth a pound of cure. Keep the milk as germ free as possible. This may be done by keeping the cow and stable as clean as possible. By milking with dry hands, by the use of smooth tin pails. Never use wooden pails, as the milk cannot be cleaned out of the pores of the wood and the pail soon becomes foul. Cans and pails should be thoroughly washed and scalded every time they are used. They should be washed with lukewarm water and a brush (not the old time dish cloth), then scalded with boiling water. In scalding do not pour the water on top of the can and let it run down the side as it becomes cooled before it reaches the bottom. The germs you wish to destroy are most likely to be found right at the bottom in the seam where the sides and bottom join. Begin there and work up.

Do not let the milk stand in the stable after milking. Always strain milk as soon as possible after milking. Some may say, "What is the use of straining the milk if the plants or germs are so small, no strainer could catch them?" True enough, if taken singly; but if we can catch a straw, a hair, and a small particle of manure in our strainer, we will in all probability capture a large number of germs with them. The best strainer to my mind is two or three ply of cheese cloth stretched across the can and held there by four clothes pins stuck over the sides of the can. This strainer is easily washed by dipping up and down a few times in warm water and then in scalding water. It is also cheap, so that the old one may be replaced often. Have your milk-stand in a nice clean place away from pig pens, whey tubs or any other strong smelling place. If you are using an open stand do not have it under a tree. Birds and sometimes domestic fowl roost in the tree, and their droppings fall into the can. Caterpillars and grubs fall into the milk. Road dust settles on the leaves and is shaken down by the wind or washed down by the rain. The yeast germ which gave cheese makers so much trouble last year was found to have its home on the leaves of trees.

When the milk goes to the factory it is all mixed together, and if any one can contains these bad germs they go on growing in the whole supply. Then they are run out to the whey tank and continue to grow till the next morning, when the whey is returned to the farmers, thus seeding every farm in that section with the germs that one careless patron let get into his milk.

We cannot be too careful to empty our cans as soon as they reach home, and thoroughly wash and scald them. If possible have two stands for milk, the other for whey. In this manner if the cans are properly cleaned, we can keep the milk and whey apart and by so doing avoid a great deal of the danger from this source.

It is still better practice to draw the whey in separate vessels, not putting it in the cans at all.

IMPROVEMENT AND MANAGEMENT OF THE DAIRY HERD.

By A. J. Wagg, Mindemoya.

At the present time we have two types of cattle, the dairy and beef types. They did not always exist as such. The time was, centuries ago, when these two types were one, but as man took hold of that original type, those who wished to produce beef selected and bred those animals which would produce the largest amount of beef regardless of the milk they gave, while those who were after milk, butter and cheese, selected and bred those

cows which would give the greatest yield of these products regardless of their beefing qualities. This process has been carried on with intelligence and skill for many years, the two parties travelling as it were in opposite directions until at the present time we have certain breeds of a square blocky type used solely for the production of beef, and certain other breeds, lighter and of a more slender type, for the production of dairy products.

Now, whenever we try to combine these two types, the tendency is to pull down what others labored long to build up without getting the highest yield of either beef or dairy products. We cannot bend our energies towards producing a high average milk record for our cows without fear of getting away from the beef qualities, and vice versa.

Here in Algoma, where Providence has favored us with special advantages for both beef raising and dairying, we have been trying to do both, and as a natural consequence our yield in both lines is low. I think I am safe in saying that the average milk production will not exceed 3,500 lbs. per cow, whereas by careful selection and breeding, our herds can be so improved that that amount can easily be doubled. There are whole herds of cows in the older parts of the Province which have records from eight to twelve thousand pounds of milk per cow. What has been done in other places can be done here if we go about it in the right way.

In improving our herds it is not advisable to buy many expensive cows. It may be the quickest way, but it is not the most economical way. But by using the best sires obtainable, and by raising calves from our best cows, and putting them into the herd as we weed out our poor cows, we can rapidly build up a good dairy herd. Too many people are using grade sires. No greater mistake can be made. It has been truly said that the sire is half the herd. By using a pedigreed animal we can study the merits of the animal from which our sire was bred. If we select a good sire, bred from good stock for two or three generations back, we may be reasonably sure that he will get good stock in his offspring.

We should also not forget the weeding out process in building up a dairy herd. In every herd of ten cows in this district (Manitoulin Island) I venture to say there are, on an average, at least two cows that are not paying their owner for their feed. It would be better to give those cows away than to keep them occupying stable room and eating up the profit from the rest of the herd. But we do not need to give them away. There are plenty of people looking for cheap cows who will readily buy them if the price is low. In order to detect our poor cows we should weigh their milk for a few days every month and test it with a Babcock tester. The color of milk is a poor guide by which to determine its richness. In many cases it is very misleading.

In rearing calves we should begin to train them from their infancy for the important position they are to fill later as money makers for us. The calf may be taken away from its dam as soon as it is dropped, but it should be given its own mother's milk for at least the first week of its life. We find that colostrum (first milk after parturition) contains about six times as much protein and twice as much ash as ordinary milk does, and these are two nutrients which the young calf particularly needs in strengthening and building up bone and muscle. At two weeks of age we may start to change from new milk to skim milk, at the same time adding scalded flax seed or oil cake to take the place of the fat removed. Add small quantities at first and increase as the calf gets older. The calf should also be taught to eat fine, well cured clover hay. One aim should be to produce a cow with a large capacity for consuming and digesting rough fodders. Clover hay is the best food I know of for this purpose, and we cannot get the calves to eat

it too young. In feeding milk we must try to have it at the same temperature, and feed about the same quantity at each time of feeding.

From this point to the breeding time we should aim to make the animal grow rapidly without putting on too much fat. It is well to breed the heifer so that she will drop her first calf at from two to two and a half years of age. Then do not breed her again for about four or five months. This will enable you to milk her for ten or eleven months and then dry her up and allow her three or four months in which to pick up in condition before dropping her next calf.

During the first milking period feed the heifer well. Remember she is not through growing yet, and part of her food must go to building up her frame. The heifer may not give a paying quantity of milk the first year, but this should not deter us from milking her for a long time. We must remember that we are establishing character in the heifer, and whatever we teach her to do during the first year of her milking life she will be likely to do the remainder of her life. Long milking is a habit.

If the heifer does not drop her first calf until she is three years of age she will have acquired the tendency to put on fat, and then whenever she is fed heavily she will want to produce tallow fat on her back instead of butter fat in the pail.

I do not say that any man can tell you just exactly what you should feed to get the best results. A man must be guided largely by the conditions surrounding him. He must feed largely what he grows, or can grow best on his farm, or can buy to the best advantage. But in doing this he can follow certain principles of feeding and apply them to suit his own conditions.

The following charts give two combinations of rations:—

No. 1.

	lbs.	Protein.	Carbo-hydrates.	Fat.	Nutritive Ratio.
Clover hay	15	1.02	5.20	.25	1:5.8
Oat straw	10	.12	4.14	.07	1:33.8
Roots	30	.18	1.60	.06	1:7.0
Peas	4	.66	2.06	.03	1:3.1
Oats	4	.36	1.84	.16	1:6.2
Total	63	2.38	14.84	.57	1:6.7

No. 2.

	lbs.	Protein.	Carbo-hydrates.	Fat.	Nutritive Ratio.
Clover hay	10	.68	3.50	.17	1:5.8
Corn silage	30	.27	3.40	.20	1:14.4
Roots	20	.12	1.10	.04	1:7.0
Oats	3	.27	1.42	.12	1:6.2
Peas	3	.50	1.55	.02	1:3.1
Bran	2	.24	.78	.05	1:3.7
	68	2.08	11.75	.60	1:6.2

I do not say that the above charts give perfect rations for cows. They do, however, approach a balanced ration, and I give them here only as object lessons for the purpose of impressing a few points more firmly on your minds. All fodders contain three main nutrients, viz., protein, carbo-hydrates, and fat. Protein goes to form hide, hair and hoofs, horns and muscle, and enters largely into the formation of milk. Carbo-hydrates and fat go to produce heat, energy, and fat.

You will notice that the chart gives only the digestible nutrients contained in the fodders because an animal makes use of only that part of the food which it digests; the rest being wasted as far as the cow is concerned. In chart No. 1, we have 63 lbs. of fodder and it contains nearly 18 lbs. of digestible nutrients, while in chart No. 2 we have 68 lbs. of fodder, but only about 14 lbs. of digestible nutrients. This illustration shows us that we should know something not only of the composition but also of the digestibility of our common food stuffs. At first sight we would choose the 68 lb. ration, but a knowledge of its digestibility shows us that there are four pounds less of food value in it than is contained in 63 lbs. of the other ration.

There is another point to be taken into consideration. It is not altogether the total amount of digestible matter contained in a fodder that gives it value, but it depends somewhat also on the proportion or the relation of the nutrients to each other. It has been found by careful experiment that about one part of protein to six of carbo-hydrates and fat gives the best results in feeding. This relation of protein to the carbo-hydrates and fat is what is known as the nutritive ratio of a ration. You will notice that clover has a nutritive ratio of 1 to 5.8, so we see that clover approaches nearer to a balanced ration than any other one fodder feed alone. Oat straw, you will see, has a very wide nutritive ratio, being poor in protein; on the other hand, most of our grains are high in protein, especially peas, bran and oil cake.

Peas and clover, both rich in protein, are also beneficial crops to grow on the land, as they belong to those crops known as the legumes, which have the power of collecting nitrogen from the air, and leaving the land richer than they found it. Some such plants are the clovers, peas, vetches and rape.

We cannot follow a trial ration like this blindly, but we must use judgment. We must consider the age of the animal we are feeding. Young animals need food richer in protein than do older animals, because they are building up new muscle. We must also consider the digestibility and the palatibility of the food and the climate in which we are feeding. The cooler the climate the more heat must be supplied in the fodder, especially if our stables are not as warm as they ought to be. Moreover, in watering our cattle too many of us water only once per day, when they are turned out and allowed to go to the trough or creek, where the water is about at freezing temperature. It is not an uncommon thing for a cow in full flow of milk to drink 60 or 70 pounds of water at one time. Where is the heat to come from to heat this water from 32 degrees up to 103 degrees, which is the normal temperature of the cow's body?

In feeding and milking we should always be regular in our habits. Especially is this the case in milking. Cows irregularly milked will not give as much milk as they otherwise would, and I think we can be safe in saying that in most cases it will not be so rich. This habit of irregular milking has a peculiar tendency to occur once a week and usually on Sunday morning.

If cows are to do well they must have salt regularly. The best plan is to have a small box nailed in the corner of the manger holding about

two handfuls of salt. It takes up very little room. Some dairymen are using a lump of rock salt in the bottom of each cow's manger.

Lastly the general care of the dairy herd may be summed up in the word "comfort." I never like to hear a man say, "Oh, it's good enough for a cow," unless it is good enough for himself. If cows are handled roughly and abused they will not give nearly such a large quantity of milk, nor will it be so rich as if the cow was made to feel that you are her friend. There should be perfect confidence between the cow and her owner. When this is the case, the cow will return to her owner the most that she is capable of producing.

THE CREAM SEPARATOR AND HOME BUTTER-MAKING.

By Chas. E. Shearer, Vittoria.

Dairying is the most important single branch of Agriculture in Ontario. Cheesemaking is, of course, the most important branch of dairying, while the making of butter in factories is constantly increasing. But home buttermaking must always be carried on by the Ontario farmer to some extent, and whatever is worth doing at all is worth doing well. A brief study of the best methods is therefore appropriate.

Of the three methods of cream separation, shallow-pan setting, deep-setting in "shot gun" cans, and centrifugal separation, the last named, is conceded by experts to be the best. The separation is done more thoroughly and quickly, the skim milk is in the best condition for feeding young animals, and more butter is obtained from a given quantity of milk. It has been ascertained that a cow giving 5,000 lbs. of milk will yield 50 lbs. more butter by use of the separator than by any other process. A good separator carefully fed and operated is one of the best paying machines on the farm. To get the best results from a separator there are certain conditions necessary. In the first place we should have a herd of cows of large milk production, and that milk rich in butter fat. The breed is a matter of choice with the individual. We will suppose, however, that a person going into the dairy business will choose a dairy breed, as it is a pretty well established fact, that although there are individual cows of great merit as milk producers among the beef breeds, on the whole they are not satisfactory as dairy cows. Then those cows need to be fed in such quantities of nutritious, palatable, and succulent foods as will enable them to produce milk to their fullest capacity. They also require an abundant supply of pure water and access to salt, as they will not do their best without it. The stables in which they are kept should be dry, warm, well-lighted, and well ventilated, these four conditions are of very great importance to milk production.

The milking should, as far as possible, be done regularly as to time, and the same person milking the same cows, and in the same order. For the purpose of butter making, or for that matter for any purpose, it should be the aim of every milker to have the work done in the cleanest possible manner. In the winter the cows' bags and thighs should be clipped, to prevent the dirt sticking to them, and to make it easier to wipe the dust off with a damp cloth. As soon as possible after the milk is drawn, it should be removed from the stable or yard and separated. The natural heat is the best for separating, but should it for any reason be necessary to let the milk get cold, it may be heated up by placing the pail in a pan of hot water and stirring until it is from 90 degrees to 95 degrees, when it may be separated.

It is advisable for the same member of the family to run the separator every time. The hum of the cylinder becomes a familiar guide, turning will be steadier, and the oil cups and other details so necessary for good work will be more carefully observed. A separator should be thoroughly washed each time it is used. Cleanliness in every part is absolutely necessary to secure a first-class product. Have the cream duct regulated to give you 25 or 30 per cent. cream. The richer the cream the lower the temperature for churning. When the separating is done, cool the cream at once to about 58 or 60 degrees. In mixing two or more skimmings together, be sure to have them both cooled. Do not put warm cream in with cold. Stir thoroughly and frequently while ripening, adding the culture if any is used when the cream is first mixed, stirring often until it has a smooth glossy appearance and a pleasant taste.

A barrel or box churn is the best for the home dairy. When the cream is ripe, scald the churn and cool to the temperature of the cream, which should be from 56 to 64 according to conditions. If color is used, it should be put in the cream when it is put in the churn. Turn the churn so as to get the greatest concussion possible. The butter should come in from 30 to 50 minutes. After the butter has come, draw the buttermilk using a strainer to catch the particles of butter that may escape with the butter milk, then wash with cold water, using about the same quantity as there was of cream. Turn the churn rapidly 12 or 15 times, draw off the water, allowing it to drain some minutes. The butter should now be in granules about the size of wheat grains and is ready for salt. This can be done either in the churn or on the worker. The quantity of salt to use will depend on the taste of the consumer. Usually about one ounce to the pound will suit, but some like less and some more.

A lever worker gives a better grain and is very much easier and quicker than the old way of bowl and ladle. Be careful not to overwork, for that makes it salvy, yet it is necessary to have not more than 16 per cent. of moisture retained in the butter. The manner in which the butter is put up for market has a great deal to do with its sale. A neat attractive appearance goes far towards making a reputation. Pound bricks are perhaps the most favored of any. A good quality of paper with the name of the farm and the makers' name neatly printed will go far to build up a good business. The success or failure of making good butter depends almost altogether on the careful working out of each detail combined with scrupulous cleanliness throughout the whole operation.

ROTATION OF CROPS.

By E. C. Drury, Crown Hill.

In forming a rotation of crops, three things should be had in view, namely, to keep our land busy in producing useful crops, to maintain or increase fertility, and to check the growth of weeds. That these three things can be accomplished at the same time has been proved over and over by experience. We may keep our land busy every year in the production of useful crops, we may increase fertility by growing a proper proportion of those crops that feed from the air, and at the same time we may do much to check the growth of weeds, by a constant and systematic change of crop. The best

results in this direction cannot be accomplished without adopting some definite system of cropping, after careful consideration of the needs of our land and the kind of produce we wish to turn out, and keeping in view the object of a rotation. We cannot, in the forming of a crop rotation, lay down any definite rules that will apply in all cases, because circumstances differ very widely, but we can explain the unchanging, underlying principles, and then leave each man to form his own rotation to suit his own needs.

So far as general farming in Ontario is concerned, we have but three classes of crops out of which to form our rotation. These are, first, the cereal grain class, including all our common grains as well as the true grasses; second, hoed crops,—roots or corn, which may be cultivated while growing; third, the legumes, or the clover family, including the clovers, peas, beans, vetches, alfalfa, and some others. On the successful arrangements of these three classes depends the success of our rotation. We must aim to arrange them so that each crop will leave the land in good shape for the succeeding crop, so that weeds may be killed by cultivation, or smothered during the progress of the rotation, and so that the whole system may work to increase the general fertility of the soil. To do this it is necessary that we should understand the characteristics of these different classes of crops.

The cereal grains, wheat, oats, barley and rye, and the grasses, timothy, brome grass, orchard grass, etc., though forming a very wide range of plants, and differing much among themselves, have their most important characteristic in common,—their manner of feeding. They are all earth feeders, that is, they are dependent for their food on the soil, and the supply of food it contains. Hence all their food must be supplied to them in one form or another in the earth. Further, in regard to two important elements of fertility they are peculiar. They are comparatively light feeders on potash, and heavy feeders on soil-nitrogen. Beyond this, it is well to note that they are all plants which cannot be cultivated to any extent while growing, that owing to their upright and open manner of growth they are not good smothering crops, and their general effect, both upon the fertility and cleanliness is not good, for they reduce fertility, and give the weeds a chance to spread and multiply. They are, however, such a useful class of plants that we cannot do without them. We must therefore study their needs in forming our rotation, and place them in such a position in the rotation that they will always find the ground well supplied with food, and their chance to allow weeds to grow and spread will be reduced to a minimum.

The second class, the hoed crops, contains many widely different plants. In fact, the members of this class are alike in only one thing, they are all plants that are grown in separated drills or squares, and for this reason may be cultivated while growing. This fact points to the position which this class of crop should occupy in the rotation, that it should be the cleaning crop of the rotation. Where cultivation of these crops is thorough and persistent, they are the very best way of cleaning the land, and the cultivation that kills the weeds benefits the crops. In every well-regulated rotation in a country such as this is, where cattle in one form or another are a very important branch of agriculture, the hoed crop will be used extensively. We cannot afford to clean our land by a wasteful system of summer fallowing any longer, but should rather provide in our rotation for such a proportion of hoed crop as will serve to keep our land clean. By this means we can clean our land as effectively as by means of a summer fallow, and at the same time if our hoed crop be either corn for silage or roots, we may obtain

a supply of cheap succulent food that will be of great value in feeding our cattle, in fact, of such great value that we cannot afford to do without it.

The third class of plants, the legumes, are the most important class of plants in the rotation, and indeed, all rotations are based on this class of plants. This class of plants includes the clover and pea families, and is distinguished by being air-feeders, taking the most important part of their food from the air. The air around us consists in greater part of a gas, nitrogen, which forms the chief fertilizing ingredient of soils. In the form of a gas, however, it is absolutely useless to most plants as food, and it must be changed to a solid form before most classes of plants can make use of it. This one family, the legumes, however, has the faculty of feeding directly on this gas, nitrogen, and not only getting its own supply of food out of the air, but leaving in the earth a supply of nitrogen in a solid form for the use of succeeding crops. This is the only family of crops that can do so, and this fact makes them the foundation of all rotations, for by the means of these plants we are able to tap the inexhaustible store of nitrogen of the air, and bring it into a form in which it will be of use to us. Under favorable conditions, these plants will obtain practically all of their nitrogen from the air. It is easy to see the significance of this. It means that every ton of this crop harvested and fed on our farms, and the resulting manure returned to our lands, will have the same effect upon the fertility of our land, as though it were bought and fed, because the nitrogen which it contains was got, not from the soil, but from the air. Beside this effect, through the medium of the farm yard manure, there is a great deal of fertility added to the soil in the stubble of these crops, which is plowed down. This is especially true in the case of red clover, where a very great quantity of roots and stubble is turned under to add to the fertility of the land. For this reason red clover is the most important member of this family so far as the formation of rotations is concerned, and indeed forms the basis of most systematic rotations in this Province.

In the case of the legumes, however, we must remember this fact, that though they feed on the nitrogen of the air, they do so not through their leaves, but through their roots, by means of a certain low form of life which lives in partnership with them forming those potato-like nodules which we may see on the roots of these plants. Hence, since the nitrogen which they obtain from the air is got not from the air which touches their leaves, but from that which is in contact with their roots, it is important that the soil where these plants are grown should be open, porous, and dry. It is a commonly observed fact that these plants suffer more than others from a condition of excessive moisture in the soil. They do so because such soils contain very little air, by reason of the water that fills their pores, and the plants are really starved because there is no atmospheric nitrogen in contact with their roots.

It is often stated that it is impossible to follow systematically a rotation based on the use of clover, because the clover is such an unreliable plant, hard to get a catch of, and easily killed out during the winter. I believe that where such is the case, the reason will be found in one of three causes, either the soil was in a low condition of fertility, in which case the young plants were left too much exposed to the effect of spring and summer drouths, or the land was wet and sour, in which case the plants could not thrive for lack of an abundant supply of nitrogen about their roots, or were heaved out by spring frosts, because of the wetness of the land, or the young clover

was pastured off too close in its first season, weakening the vitality of the plants, and destroying the cover of dead leaves and tops which should serve to protect the plants from winter freezing and spring heaving. When proper attention is given to securing the right conditions, I believe clover is a thoroughly reliable crop.

Our rotation, then, will be the way in which we combine these three classes of crops—the cereal grains, hoed crops, and legumes. As a first principle we should lay down the rule that the legumes, our air-feeders, should be brought in as often as possible, at least once in four years. When we have decided how often we will bring in the legumes, the rest of our rotation is comparatively easy. Either hoed crops or cereals may follow the legumes, but we must reserve a certain amount of cereal crop to seed down in clover again. A sufficient amount of hoed crop should be grown to supply the needs of stock for succulent food, and to keep the land clean, and to this crop the manure of the farm should be applied.

As concrete examples of how the principles of the rotation may be followed out in practice we will give these two rotations, both of which are put into practice on Ontario farms. The first is a three course rotation and consists of the following:—

1st year..... Clover.
2nd year.....Hoed crop.
3rd year.....Wheat, oats or barley, seeded down.

This fulfils all the requirements of a rotation in the matter of maintaining fertility, but from the large amount of bulky fodder, hay and hoed-crop, it is only suited to the needs of a farm devoted almost entirely to cattle. Another rotation which consists of four courses, and perhaps better, meets the needs of most farmers in the crops grown is the following:

1st year..... Clover.
2nd year.....Oats.
3rd year.....Hoed crops, manured.
4th year.....Wheat and barley seeded down.

In both these rotations fertility is maintained by growing a large amount of clover, and provision is made for cleaning the land by a large amount of hoed crop. These, however, are not given as models to be followed, but as examples of how the rotation may be worked into practice. Every farmer should form his own rotation to suit his own needs. We would, however, strongly urge every farmer to adopt some definite system of rotation, without which there can be no intelligent method of cropping the land.

Q. Has timothy the same effect on the land as clover?

A. E. C. Drury, Crown Hill. No, timothy has an effect similar to cereal grains, impoverishing the land.

Q. Do you sow timothy with clover?

A. Yes, we sow a little. It helps to hold the clover up, and if the clover should kill out in patches the timothy holds the land.

Q. Does buckwheat feed from the air?

A. No. None but legumes can do this.

Q. Are turnips and mangels hard on land?

A. Yes, very, but since they are fed, and the manure returned, they do not impoverish the land.

THE IMPROVEMENT OF CEREAL GRAINS BY SEED SELECTION.

By Leonard H. Newman, Ottawa.

In past years a good deal of thought has been centered on fertilizing and cultivating the soil so that the largest possible returns might be secured from a given amount of labor and expense. Unfortunately a great deal less stress has been laid on the value of high class grain for seed, for man has been slow to recognize that plant life, as well as animal life, is in a large measure within his control.

True, in past years, a good deal has been done at our Experiment Stations to ascertain the most profitable varieties for our farmers to grow, and a good many have taken advantage of this knowledge and have introduced splendid varieties on their farms with fairly good results.

But this is not enough, and it is just here that the mistake is so often made. There is no guarantee whatever that high class seed, and the generations which succeed it, will retain their original value where no selection or discrimination is made between superior and inferior grain for seed. It is the observing, thinking, painstaking, and progressive farmer who sows only that seed which is likely to give him the best crop. In this connection let us notice the results of experiments carefully conducted at the Ontario Agricultural College, Guelph, for from five to nine years along this line, and for which information we are indebted to Prof. C. A. Zavitz.

Very careful selections were made by securing an equal number of large plump and of small plump seeds of oats, barley, spring wheat and peas. The selections were made each year from fresh seed grown in large fields. The greatest difference in the results produced in the two selections of seed is found in the case of oats, the large plump seed producing nearly twelve bushels per acre more than the small plump. Taking the average results of the four classes of grains we find that the large plump seed has produced 5.3 bushels per acre more than the small plump grain.

Another line of experimental work has been followed in which large plump, small plump, and shrunken seeds, have been selected from barley, spring wheat, oats, and winter wheat, each selection being taken each year from the production of a similar selection of the year previous. One of the main objects of this experiment is to find out the influence, on the comparative size of the seed produced, through continuous selection along a definite line. As a result of this experiment we find that in all cases the yield from the large plump seed was considerably larger than the yields from the other classes of seed. We also find that in both peas and winter wheat split seed is decidedly inferior to large plump grains for seeding purposes.

We can easily see, from these experiments, why we hear farmers so often say that their grain has "run out," and we are forced to conclude that the crop producer is certainly not looking after his own interests if he neglects to give the closest attention to the sowing of nothing but large, plump, heavy seed on his own land.

Now, although it has been proven beyond doubt, that the yield may be materially increased by giving due attention to good seed, still we find that we can increase the yield much farther and raise the standard of the variety still higher by careful growing of the plants, and by intelligent, systematic selection continued without interruption from year to year right in the field and among the plants themselves.

Through selection, the farmers of the Northern States have greatly increased the yields of their corn fields. In the case of sugar beets also, we find that the percentage of sugar in the juice of the roots has been increased

probably one hundred per cent. by rigid scientific methods practiced on a large and expensive scale by European seed-growers. Here, as in other lines of breeding, the principles and practice are comparatively simple and easily mastered; remove it from the domain of abstruse reasoning, where some teachers of heredity place it, and plant improvement becomes a practical business proposition, an important affair of state. It is well known that great things have been accomplished by careful selection in the case of animals. Take the case of Messenger, an imported English race horse which became the leading progenitor of the American race of trotting horses; by rigid selection, extensively practiced, his descendants are gaining in trotting ability from year to year.

With the element of variation once in hand, the horsemen of America have gone on improving and intensifying it and reducing the American trotters to a uniformly fast trotting race of animals.

Parallel cases are met with in the plant kingdom which prove beyond a doubt that such qualities known as vigor of growth and productiveness in individual plants are transmitted through their seeds to the succeeding plants quite as surely as any desirable characteristics are transmitted to animals through their ancestors.

In careful field selection we have the advantage of having a large number of plants to select from, and we have the advantage also of knowing the character of the plant itself and this is of prime importance.

To secure best results, we must select from the most healthy and vigorous plants those which have produced superior heads having the largest number of well developed spikelets. In fact the careful breeder has numerous things to watch. He must have a clear idea of what he wishes to secure. For example, he may not wish only to keep up the yield, but also to develop a stronger strawed variety out of a weak one. Whatever be the characteristics he is after, he must select from those plants which show these in a more marked degree than those which surround them. If this be done carefully and intelligently the reward will be forthcoming.

The possibilities of this method of improving our cereal grains were seen to be so great that in 1900 Sir Wm. Macdonald, of Montreal, gave over $10,000 to be distributed in prizes to boys and girls on Canadian farms, to encourage them to observe and study the benefits to be derived from making for themselves a systematic selection of seed grain year after year. This competition lasted three years, and so great were the possibilities of this work that an association known as the Macdonald-Robertson Seed Growers' Association was formed with a view to further encourage the production and general use of seed of superior quality for farm crops. In order that this association be enabled to carry on effective work the Dominion Government grants the necessary funds each year. Full particulars regarding this association may be had by applying to the Seed Division, Department of Agriculture, Ottawa.

Now, let us consider what this work really means to the country as a whole. Its value, however, is obvious, since by breeding, the value of some plants, such as sugar beets, has been enormously enhanced, it does not seem too much to hope that most of our economic plants can be made 25 per cent. more valuable than they are now. According to conservative estimates Ontario alone produces about 110,000,000 bushels of oats annually, besides all the other crops. Now if this crop be valued at 30 cts. per bushel it would mean $33,000,000 to the Province. But if high class seed were used, seed which by careful breeding by selection had been made to yield 25 per cent. more, this would mean about 25,000,000 bushels more to the Province, and at

the same price would mean an increase of about $8,000,000. This is considered a conservative estimate of what it is possible ultimately to accomplish in the Province by the improvement of our seed oats alone.

Any farmer can readily estimate what this percentage increase means to him on his own farm, not only in the case of oats but in all the different crops he produces. While better farming and better cultivation are ultimately the more important, in the aggregate plant-breeding is relatively of greater consequence until our crops are brought up more nearly to their possible maximum of yield.

In view of the great results from breeding which have already been obtained, it is safe to assume that persistent effort will bring improvements that are now generally deemed impossible. Just as the human mind, from the minds of the semi-civilized races, has been built up step by step by the association of ideas resulting in the creation of the more complex knowledge of the present, so the different varieties of plants are gradually being built up by the creative power of natural variation. When we view this development of the mind of the human race from its lowly origin to its present state. we cannot predict a limit to its expansion in the future. Nor when we observe the development of useful plant forms through their changes from a simple beginning to their present complexity, can we assume that there is any practical limit to the betterment of our plant varieties.

In conclusion, I think the whole thing is summed up in the one sentence, viz.,—Good seed is at the foundation of good farming, and to secure good seed simply requires a little careful and intelligent selecting on the part of the farmer himself.

NOXIOUS WEEDS.

By W. S. Fraser, Bradford.

This question of dealing with weeds is one that is pressing itself upon all who have any regard for either the appearance or productiveness of their farms. They are a great hindrance to a farmer's success, occupying space and using up plant food. They are vigorous feeders and thus deplete the land to no purpose. They also draw largely on soil moisture; a ton of weeds (dry matter) requiring from ten to twenty tons of moisture to produce it. The lack of moisture in our land lessens the power of crops to make use of plant food in the soil. Weeds also require the expenditure of labor each year to keep them in check. This means money.

The old idea that weeds grow spontaneously is being discarded, and the only logical one "that a weed is the product of a seed" has taken its place. Weeds reproduce abundantly and their seeds are possessed of great vitality. After lying dormant in the earth for years, they will grow when brought near the surface. Weeds are despised plants that have had to fight for an existence, and each one is possessed of some strong feature that enables it to thrive and reproduce under adverse circumstances, hence the sayings, "Grow like a weed" and "Hardy as a weed."

We are told that nearly all our weeds have been imported and have been distributed from place to place. Some have wings and are carried by the wind, such as sow thistle, some have hooks such as ragweed, burrs, etc., which attach themselves to animals or clothing. Threshing machines carry them from one farm to another. Railways are great mediums for carrying

them from one district to another. Seed grain not properly cleaned brought from one district to another brings its quota of weed seeds. But perhaps the avenue through which we get most of our new weeds is in the purchase of our clover and grass seeds.

The investigation that has been carried on under the Department of Agriculture at Ottawa for the last two years has been a revelation to many. Samples of red clover have been found to contain over 40,000 weed seeds per pound, Alsike 49,000, and Timothy over 50,000, and as many as sixteen different varieties.

This should open the eyes of farmers, and make them more careful in the selection of clover and grass seed. Weed seeds obtained in this way have better chances of growing than those that are brought to our farm in other ways. We pay good money for them and bring them home, and sow them in land that is well prepared for their growth. The first year the annuals reproduce, the biennials develop their root systems, and the perennials have become a fixture. This investigation has also shown that much of the clover and hay seed sold to farmers is low in vitality, and this fact together with the number of weed seeds which it contains increases the cost of the genuine seed in some cases 100 per cent., showing clearly that low grade seed is most expensive.

We may classify our weeds as follows: Annuals, biennials, and perennials. Annuals complete their existence in one season, e.g., mustard, ragweed, and wild oats. Spraying with sulphate of copper when plants are well up is an effectual way of dealing with mustard where it is thick. After harvest, cultivation is a good way of dealing with ragweed and wild oats. Winter annuals are plants which require a longer season than we have to develop them. Their seed usually germinates after mid-summer, they endure the winter and early the following season produce their seed. Prominent among these are false flax and pigeon weed. These flourish mostly in fall wheat and clover. The remedy is to avoid sowing fall grain as far as possible. Fall or spring cultivation destroys them. Biennials are those which require two seasons to develop. The first year they develop their root system, the second season they produce seed. Burdock and wild carrot are easiest to deal with, and are not troublesome in cultivated land. By cutting them two inches below the crown they will be destroyed. Cutting above the ground has very little effect and digging out the root is unnecessary. These, like the annuals, are propagated only from the seed.

Perennials are those whose roots continue to live from year to year. Simple perennials, such as the ox-eye daisy do not propagate from the roots, but creeping perennials, such as Canada thistle, sow thistle and bindweed extend themselves by their roots, as well as by the seed. These are the most difficult to eradicate. Thorough cultivation, keeping them cut off for one season and not allowing them to develop deep growth will exhaust the roots.

Weeds are on the increase in many localities, and it requires diligence on the part of the farmers to conquer them. Our fathers had difficulties in cleaning the land of timber and other obstructions for our use, and we should have ambition enough to not allow it to become polluted with weeds. We need to study their nature and habits of growth. If, however, a new weed appears which we are not able to botanize, we should send a specimen to the Guelph Agricultural College or to the Experimental Farm, Ottawa, where it will be identified and its name, characteristics, and eradication sent us by return of mail. This may save us a great deal of trouble, for the old saying that "One year's seeding is nine years' weeding" is too true.

With regard to the cleaning of seed grain, farmers do not as a rule give it the attention it deserves. In the purchase of grass seed we may examine

it by spreading it on a sheet of white paper and ascertain what proportion of it is foreign, or if we send a sample to Ottawa they will tell us the number of weed seeds per pound and what they are. We cannot afford to neglect any precautions to prevent new weeds getting a hold on our farms.

At the last session of the Dominion Parliament a bill was introduced by the Honorable Sydney Fisher regulating the sale of seed, requiring that all seed sold be graded and labelled No. 1, No. 2 or screenings, and that when seed is found to be of lower grade than labelled the vendor is liable for damages. This bill will likely become law during the present session.

Q. How would you kill bindweed?

A. W. S. Fraser, Bradford. My experience has been that it will require two years of bare cultivation to kill it. I have a small patch about two rods square which I plowed or cultivated every time it showed above the ground. The first season I did not see that I reduced its vigor at all. I continued the same the next season, and I think I have destroyed it.

Q. Will salt kill it?

A. I have heard of several men who tried it say that it was not a success. One man said he covered it with manure about three feet deep, and in two weeks it was up through the manure. I met a man who said he saw a patch killed by pouring a lot of sour whey over it.

Q. When did he apply it?

A. I cannot say. He said also that the ground was not injured, but produced a crop next season.

Q. Do you believe him?

A. I don't know. He was a respectable man, reeve of a township, and affirmed it before a large meeting. It is not hard to try, and even if it does not prove a success it is not an expensive experiment.

Q. Is sow thistle easily destroyed?

A. It will require thorough cultivation for one season.

Q. Will stock eat it?

A. Yes; sheep are very fond of it. I may say that sheep are very helpful in keeping a farm clear of weeds. Hogs are fond of the roots of the sow thistle.

Q. What proportion of sulphate of copper is used in spraying mustard?

A. Nine pounds to forty gallons. This will spray an acre.

Q. Would this kill other weeds?

A. If it were made stronger it might. I used a chemical compound known as "Thistleine," manufactured by the Lindgren Chemical Co., Grand Rapids, Mich., U. S. A., which is guaranteed to kill to the extremity of the roots any plants on which it is sprayed. It was late in the season when I got it and I tried it on Canada thistles and sow thistles. The tops withered in a day or two, the roots appeared dying, but in plowing about two weeks after I found some of the roots still living. It may be that if it were done earlier in the season it would be more effective. I intend to experiment with it further next year.

Q. Is it expensive?

A. Yes it will cost about 40 cents per gallon, yet if it is done as it is said to do, I think it is the cheapest way to deal with sow thistle, and many other weeds.

Q. How do you apply it?

A. With a hand spray, the finer the spray the better. It is easier to spray small patches than to spud them; and if it kills it is done forever, whereas spudding only checks the growth.

FARM MANURE AND ITS APPLICATION.

By Wm. Elliott, Galt.

It has been said that "tillage is manure," and undoubtedly the fertility of our soils depends very largely upon the cultivation they receive; but to obtain a full crop, we must have more than cultivation, we must have plant food, and this food must be near the surface and within reach of the crops. With plant food and surface cultivation we have ideal conditions for a full crop.

With the failing fertility of our soils, comes the questions, "How can we make the most of our plant food?" "How can we best care for our farm yard manure that we may obtain the most from it?" Possibly we can the better understand the care and application of manure by studying for a moment or two the natural conditions of our virgin soils. We find upon examining them, that they are very loose and pliable. They have little or no adhesive properties. Why? Because from year to year the leaves and grass growing upon them are returned to the land through decay, and consequently contain an abundance of vegetable matter, or in other words, an abundance of humus. Then if this vegetable matter has such a mechanical action upon the soil preventing it from becoming hard and clogged, surely we will be working in our best interests by applying as much of this vegetable matter or humus to our land as possible.

Then there is still another quality which we will observe in our virgin soils. They are always somewhat moist, even at the driest time we will find upon removing the leaves or grass that the underlying soil always contains a certain amount of moisture. The lesson to be learned from this is, that humus in the soil acts as a mulch to the crops growing on them, and also that we should apply manure as near the surface as possible. We will find that the nearer we can approach the natural conditions of our forest land in our farm operations the surer of success we will be. We must have humus and moisture, the two most important requisites in agricultural work. This being established, it is for us to apply manure near the surface of the soil within reach of the plant roots. The ideal method is to use cut straw for bedding and top dress our land, rather than plow the manure under. We will get more benefit from the manure in this way than by plowing it down, even to a depth of four inches. Besides, it will when applied near the surface act as a mulch to the crop and prevent the escape of moisture. We have been manuring our land too heavily in the past. We were advised years ago when we gave our land a coating of manure to give it a good one. The result has been that much of the plant food escaped, either by leaching or evaporation, before the crops could make use of it. Much better results would have been obtained by giving the land half the amount usually applied, and going over it twice as often. Then we find that the manure applied near the surface has the power of entering into chemical action with the insoluble elements of plant food. By applying fresh manure near the surface of our land it undergoes fermentation, and the heat evolved will raise the temperature of the land in some cases as high as eight degrees. This is of much importance with the corn crop, which requires a very warm soil, and we are often enabled through this method to bring our corn crop successfully through a backward season.

Possibly the greatest waste of fertility in connection with farmyard manure takes place in the farm yard. Too often do we see a stream of dark brown liquid running away from the yard. If we could only prevent the loss from this source alone, we would have attained much. Chemical analy-

sis goes to show that by far the greatest amount of fertilizing element is contained in the liquid. Some experimenters give the value of liquid manure three times as great as the solid. By constructing our yards a little differently and by using more absorbent we could make a considerable saving.

The main thing to be observed in saving for manure in the yard is to prevent it fermenting. Manure that has undergone the heating process has decreased in value almost one half. By far the best plan is to get it out on the land in a green state and allow the fermentation to take place in the soil.

The value of manure will depend largely on the age of the animal fed, and the quality of food supplied.

WASTED FERTILITY.

By Prof. Robt. Harcourt, O.A.C., Guelph.

There is no one question of greater importance to the farming industry than that of soil fertility. In order that the industry may be successful, it is not enough to produce crops which bring more than they cost in the way of interest on capital, labor and manures, without taking into consideration the affect of their growth upon the future productive capacity of the soil. The relation of the outgo and income of the fertilizing constituents is an important factor in determining profits and must be considered. The farmer who secures crops that bring more than they cost, and who, at the same time, maintains or even increases the productive capacity of his soil is, other things being equal, the broadly successful man.

The full meaning of the term "soil fertility" is not easily expressed, since many conditions are involved, all of which exercise more or less influence. Fertility proper is by no means a wholly chemical question, dependent upon the amount of plant food the soil contains. In many cases the physical conditions which regulate the supply of air and water to the plant, and as a corollary, the bacterial life, are far more potent in producing a fertile soil than the mere amount of nutrient material it contains. These latter factors, however, while immensely important in bringing the soil and the plant food it contains into right relationship with the plant and its needs, do not increase or maintain the supply of food in the soil. Nitrogen is absorbed from the air in various forms, but the ash constituents used by the plant are derived wholly from the soil and the manures which have been applied thereon. Hence, it is important that a fertile soil should contain a considerable quantity of those constituents which are taken from the land in maximum quantities by the crops grown. The removal of crops rapidly exhausts the soil of these constituents and finally reduces the quantity contained in it to so low a point as to make profitable cropping impossible.

It has been recognized for many years that plants require at least ten different elements for their normal development. Each one of these substances has apparently a special duty to perform in the growth of the plant and without anyone of them no normal growth is made. Happily the number liable to rapid exhaustion is limited in many cases to three, and at most to four. These are nitrogen, potassium, phosphorus, and calcium or commonly spoken of as nitrogen, potash, phosphoric acid, and lime. The soil is most likely to become exhausted in these because they are taken up by plants in larger quantities and because they exist in soils in smaller amounts than the others. It has also been proved, physical conditions being equal,

that it is the one element of these which exists in the smallest amount which measures the crop-producing power, or fertility, as one element cannot substitute or exert the full functions of another. There may be a relative abundance in the soil of potash and phosphoric acid, but practically no nitrogen, in which case good crops of cereals, for instance, could not be grown, because no other element can substitute the nitrogen required by the plant, and, as it can not be obtained by it from any other source than the soil, the productive capacity of the soil for these crops is no greater than if the mineral elements mentioned were present in much smaller amounts. Many of the swamp soils throughout Ontario, while very rich in nitrogen, are poor in potash and, consequently, do not give profitable returns. On the other hand, there are soils that are so rich in all the elements that if productiveness depended upon them alone, maximum crops might be grown for years without exhausting them, while actually they are now incapable of producing a single profitable crop because certain other conditions which are essential are absent. They may be too wet, too dry, too acid, out of condition due to some improper method of cultivation or from many other causes, their fertility may be useless, and thus, in a sense, wasted. It is, however, not so much of the waste of fertility in this way that I wish to speak as of the waste of the fertilizing constituents due to improper methods of cultivation, and more particularly through the short-sighted practice of allowing the important constituents of plant growth to be sent out of the county in the form of ashes, bones, tankage etc.

Of the essential elements, nitrogen is, in one sense, of the greatest importance; it is the one more liable to escape than others and, when applied as a fertilizer, costs more than the ash constituents. Nitrogen is the most liable to be washed from the soil, because it is available as a plant food largely in proportion as it changes to a nitrate, and in that form it is soluble and is readily leached from the soil. The losses by leaching will be influenced by the amount and time of the rainfall, by the retentive power of the soil and subsoil, by the amount of vegetable matter in the soil and, by keeping some crop on the ground to make use of the nitrates as formed. It may not always be practicable to keep the ground covered with a crop, as some times the loss incurred through leaching, because of the absence of a growing crop, may be more than balanced by the gain in potash and phosphoric acid which has been brought into an available condition by the extra cultivation which has been put on the land. However, by judicious handling and careful cultivation the loss of nitrogen by leaching may be reduced to a minimum. There is, also, always a loss of this element in the removal of the crop from the land. In no case is all the nitrogen returned in the manure. Fortunately, we are enabled through the growth of legumes to draw on the enormous supply of nitrogen in the atmosphere to make up for all these losses and the keeping up of the supply of nitrogen in the soil is not so difficult a task as it was thought to be at one time.

In the case of the ash constituents, phosphoric acid and potash, which exist in fixed compounds in the soil. the actual losses are undoubtedly very much less than is the case with nitrogen, since only traces of these constituents are ever found in solution in the drainage water; yet, because of the large quantity of water that passes through many of our soils, the total amount rendered soluble and carried away by this means is very great. To these losses, we must add the amount of phosphoric acid and potash lost to the land by the sale of crops, milk and animals from the farm. This is considerable, and what makes it worse, it is an absolute loss, as there is no natural means by which these may be returned to the soil, as is the case with nitrogen. The manure made on the farm cannot contain as much of these

two constituents as was taken from the soil by the crops; consequently, the land must be gradually becoming poorer in these substances. This constant drain on the farmers' capital may not be felt for a long time, but it will be felt and is now felt on many lands.

That farmers in older countries realize this is evidenced by the fact that they are now using immense quantities of artificial manures, and that our wood ashes, bones and tankage are eagerly bought up to supply these demands. In view of the fact that these substances contain large quantities of potash and phosphoric acid drawn from Canadian farms, can we afford to let them go?

In answer to an enquiry at the Customs Department, Ottawa, regarding the amount of wood ashes shipped out of Ontario each year, the following statement was given: "The quantity of ashes is not recorded in the Statistical Aggregate Books, except for 'ashes, pot and pearl', the value only being given for 'leached' and 'all other' ashes, the exports of which from Ontario for the past two fiscal years were as follows:—

—	Year ending June, 1901.		Year ending June, 1902.	
	Bbls.	$	Bbls.	$
Ashes, pot and pearl	180	3,230	109	2,017
Ashes, leached		421		208
Ashes, all other		38,481		51,467
		$42,132		$53,692

If we assume that ashes listed under "all other" are unleached ashes, and assign to them a value of ten cents per bushel we see that over half a million bushels of this valuable fertilizer were shipped out of Ontario during the year ending June, 1902. Previous to the development of the potash industry at Stassfort, Germany, even greater quantities were exported.

Another point, that makes it even more aggravating, is that the producer does not receive anything like value for his ashes. According to one American authority, "Unleached Canada ashes of average quality contain 5.7 per cent. of potash and 1.5 per cent. of phosphoric acid." If we value these two constituents at the price usually paid for them in artificial manures, ashes of the above quality are worth as a fertilizer about 18 cents per bushel. Very likely the producer got four or five cents per bushel for them and that in trade for soap. The majority of house ashes are, however, richer than the above, and are worth fully 25 cents per bushel for the potash and phosphoric acid they contain. Moreover, ashes contain about 40 per cent. of lime, which, according to some authorities, gives them an additional value of 10 to 15 cents per bushel, due to the action of lime in hastening the decomposition of organic matter, correcting acidity, and in liberating plant food in the soil. Leached ashes contain about one-half of one per cent. of potash and one per cent. of phosphoric acid; they also contain lime, so have considerable value as a fertilizer.

According to the Customs Department we are also exporting large quantities of bones and tankage. Unfortunately the following figures are not for the Province alone but for the whole Dominion:

Material.	1901. Tons.	1902. Tons.
Bones	3,230	2,457
Tankage, etc.	2,700	3,536

The bones contain from 20 to 25 per cent. of phosphoric acid and 3 or 4 percent. of nitrogen, and the tankage about 20 per cent. of phosphoric acid and 5 per cent. of nitrogen. If we estimate the value of the bones at $12 per ton, and the tankage at $14 per ton, which is a low valuation for these unmanufactured materials, we have a total of $155,536 worth of phosphatic manures exported each year. This does not take into account the thousands of tons of fertilizing constituents which are carried away every year in the export of live stock, dairy products, and grains; nor does it include the many tons of bones, ashes and scraps of one kind and another which are practically wasted in both town and country the Dominion over. It is made up principally of the residue from pork-packing houses and bone gathered throughout the country.

As has been stated we can get nitrogen in abundance by growing and plowing down certain crops, but potash and phosphoric acid cannot be got in this way, and if we continue to sell these substances and thus waste the soil's natural fertility there will come a day of reckoning.

Wood ashes are, of course, chiefly valuable for the potash which they contain, therefore, the gain to be derived from their use will depend upon the amount of available potash in the soil. Clays usually contain more than sands, but comparatively few soils will not be benefitted by a dressing of wood ashes. They are helpful to all impoverished soils, and especially so to those of a sandy and peaty nature. On leguminous crops, such as peas, beans, and clover, or in orchards, vineyards and gardens they are of great value. If any one wishes to prove the efficiency of wood ashes, apply them at the rate of about 40 bushels per acre on sandy soil seeded with clover and compare the growth with that on the adjoining unfertilized ground.

Phosphoric acid is not taken up by plants in such large quantities as potash, but as it exists in the soil, is more slowly brought into an available form. Thus tankage will likely give good returns on a variety of soils and a wider range of crops.

It is worthy of note here that the sale of tankage is made possible because in the large slaughtering establishments all refuse is saved and put into a form that it may be sold. Let each farmer stop the little wastings of fertility, see to it that the ashes are all saved and applied where they will give the best results, let the leakage from the barnyard be stopped, let the cultivation of the land be thorough, etc., etc.; in a word, stop as much as possible these little wastes of fertility, cultivate thoroughly and follow a judicious rotation of crops, and thus try to make the income of fertilizing constituents as nearly as possible equal to the outgo and in this way strive to, at least, maintain the natural fertility of the land.

FRUIT FOR THE MARKET.

By Prof. J. B. Reynolds, O.A.C., Guelph.

This article will deal with the marketing of fruit from the view-point of the fruit-grower, and will discuss such questions as the selection, grading and packing of fruit, and the kind of package to use. The present writer has been drawn into a consideration of this question from the side of refrigeration. After some investigations conducted in the cold storage of fruit in warehouses, the problem of transportation forced itself into prominence, for upon this depends the practical value of warehouse storage of surplus fruits.

Ultimately the question of picking, packing, and shipping fruits was seen to be allied to the original problem under investigation. In some such way as this we learn the inter-relations of the sciences, and the mutual dependence of arts and industries.

Selecting fruit from the tree. It is a matter of common observation that a tree does not ripen its fruit uniformly. It is a matter of experience that there is a certain degree of maturity at which it is best to pick fruit. For immediate use, ripeness is without doubt the desired condition. But, for fruit as well as for humans, all ripeness beneath the sun has a further stage less esteemed in the market. It is to postpone that later and less esteemed stage that fruit, for storage or for shipping, *must be picked in advance of dead ripeness.* If fruit is placed under proper conditions after picking, that is, under refrigeration or in a cool store, the ripening process is retarded. Suppose that a peach, about to be shipped to a distant point requiring 6 days to reach, is picked from the tree while still firm, and placed in cold storage immediately. If it had been left on the tree, say two days longer, it would have been dead ripe. But the amount of ripening that is accomplished in two days on the tree, requires, say, 8 days in cold storage. At the end of 8 days after picking, the peach would be dead ripe, and beginning to decay. But before this time it has reached its destination, is sold and probably used.

While it is necessary to pick fruit for shipment in advance of dead ripeness, at the same time the *quality* of the fruit,—its distinctive color and flavor, must be developed on the tree. If this hypothetical peach is picked before it has attained size, color, and flavor, it will never develop these in proper degree, and fails to attain its distinctive quality as a peach. Last year in our storage experiments we found that peaches, pears, plums, and apples when picked green kept a long time, that is, remained sound externally but put on no color except yellow, exhibited a tendency to shrivel, and when tested showed a marked absence of distinctive flavor, in some instances being tasteless, and in others bitter and unpalatable. Late Crawfords, Elbertas, and Longhurst peaches retained their exterior soundness for a month or more at a temperature of 31°F, but at the end of that time were quite valueless. If they had been allowed to develop more on the tree, they would not have lasted so long in storage, but would have been of some value when put out for use. In view, therefore, of *keeping quality*, requiring the peach to be picked in advance of ripeness, and also of *desirability*, requiring it to be left on the tree until it has developed its proper characteristics as a peach, there is a critical moment when it is best to pick it. For all quickly-ripening fruits this is emphatically true, while true in a less critical degree for all fruits. All fruit, unless intended for immediate use, must be picked while still firm, and while on the skin the green is more prominent than the yellow; but must be left until the distinctive size, color, and flavor have entered into its character. For storage or shipping, then, the picking of tender fruits is a matter requiring trained and careful judgment. A grower of cantaloups in Georgia has found that for best results he must go over his vines once in eight hours.

Grading of Fruit. The Fruit Marks Act has familiarized the minds of growers with the matter of grading fruit for export and correctly designating the same. It is obvious that for the sake of good appearances, the specimens of fruit in a package should be uniform in shape, size, and color. The necessity for uniformity in size is, however, deeper than the mere regard for appearance, although the latter is important enough in itself to justify grading. When a package of fruit begins to show signs of ripeness, it should for the sake of appearances, develop its mature shades uniformly. Storage experiments have demonstrated that, on the average, large specimens of fruit

are more advanced toward ripeness than smaller specimens from the same tree or of the same variety. No. 2 pears will almost invariably remain green longer and keep longer in storage than No. 1 of the same variety. Another point about grading is that the designation on the outside of the package, if honest and accurate, conveys to the intending purchaser definite information as to the contents of the package. Grading, therefore, has to commend it these advantages: it gives information, it imparts an evenness in ripening, and from the uniformity in size, color and shape, it improves the appearance of the fruit. Any fruit grower who carelessly or of intent ignores these very important considerations in packing fruit, works against his own interest and against the interest of the trade.

The fruit package. In the choice of a fruit package there are many requisites to be considered, some of which conflict with one another, and the relative importance of which depends upon varying circumstances. Cheapness is, other things being equal, the most important consideration, for since our packages are non-returnable and therefore are gift packages it is wasteful to put more money in them than is necessary. If a 4-cent basket will serve the same purpose as an 8-cent box, then by all means the basket should be used. Convenience in package is another requisite, while for shipping purposes form, strength, and efficiency are very important. For cheapness and convenience much is to be said in favor of the basket. As to form, it lends itself fairly well to stacking in the car. The common method of stacking baskets is to place two side by side, then to place two others across these one on each side of the handle. This is not a good method. If the upper ones happen to be placed a little to one side, one end will dip down into the fruit below, and cause damage. A much better method is to place the baskets all, or nearly all, in one direction, lengthwise of the car, the baskets above being placed between the handles of the baskets below. This method brings the weight of the upper baskets principally upon the ends of the baskets below, and the handles of the latter prevent the upper basket from shifting. Also, by this style the shearing and breaking stress resulting from the jolts of the car comes lengthwise on the basket, not sidewise, and is reduced by the strength of the handles at each end of the basket. When two rows are built in this way side by side, an occasional basket should be placed across the rows to serve as a bond.

The basket, however, is liable to two objections as a shipping package; with the open-cover basket, the usual form, the fruit is exposed to injury; and the package itself is too fragile, often breaking down under the weight of the load above.

The box appears to satisfy all requirements for fruit shipping. For winter apples, perhaps the barrel is preferable, but for softer fruits experience has placed the box at the head of the list, the bushel box for apples, or the one approved by the Ontario Fruit Growers' Association, 10"x11"x20"; a box 5" x11" x20" for pears: a similar one but somewhat smaller for peaches; and a box containing trays, four in a square, for cherries, plums, and grapes. For long shipment, as for instance to the North-West, these packages are to be recommended. It is highly desirable that a uniform package be adopted for each special purpose, in each instance simple and inexpensive as possible, suited to the size and quality of the fruit, and strong enough to stand the strain and to protect its contents from injury.

Packing the fruit. The choice of the method of packing,—whether bare packing, filling, or wrapping, must depend upon the character of the fruit and the distance of the market. There is no doubt that the use of a filler, such as excelsior, laid at the bottom and top of the fruit, and sometimes

between successive layers, serves to prevent rubbing and bruising during transit. Wrapping each specimen in paper is even a better preservative in transit, and has proved to be a preservative in storage also. Not only does the wrapper prevent bruising in transit, but it also to a considerable extent prevents the communication of disease, and maintains for a longer time the quality and character of the fruit. Pears and apples that exhibit a tendency to wither in storage, may be prevented from doing so by wrapping, and for this latter purpose waxed paper is most effective.

With regard to the expenditure of care, time, and money in the picking and packing of fruit, the argument is often advanced, with good show of reason, that the buyer fails to distinguish among good, bad, and indifferent on the same market, but offers for all alike the same price. This is undoubtedly true, and is a discouragement. But in the interest of the trade it is proper to remark here, that the failure to distinguish the careful from the careless packing will continue until the better fruit and better packing, by quantity and excellence combined, forces a distinction and makes a class for itself. It is necessary to put on the market large quantities of choice fruit, and to follow it up by large shipments until a reputation is established. Until this is done, distinction will not be made.

The question of over-production for tender fruits. The writer has heard it hinted, during recent visits to fruit sections in Ontario, that the destruction wrought among plum and peach trees, particularly, by the severity of the past winter, is a blessing in disguise. The argument is, that in some of the more perishable fruits there was last year (1903) an over-production, and a consequent falling-off in prices. But let us look at the area devoted to this production, and then the area to be supplied, and see if the charge of over-production is well founded. In Ontario our climatic conditions are such that the area suitable to the production of peaches and grapes, on a commercial scale, is very limited. Beginning with Essex County on the west, the area suited to the production of peaches and grapes consists of a narrow belt along the lake and river shores as far as Burlington. Peaches are being tried along the Georgian Bay, but it is probable that the winters will prove too severe. Other parts of Canada with few exceptions have not the requisite factors of climate to allow the production of these fruits. Their legitimate market is the whole of Canada. Evidently then it is not a question of reducing the area devoted to our chosen fruits, but a question of taking advantage of warehouse and shipping facilities at present available, extending and improving storage and transportation, and above all, that these ends may be accomplished, and our markets extended to consume our surplus products, it is a question of co-operation.

CAN WE OVERCOME "OFF YEARS?"

By J. E. Orr, Fruitland.

This question is a very pertinent one to all fruit growers; more especially to those who make a specialty of producing fruit, and who have no other sources of revenue from their farms.

Besides the loss of revenue it is a serious matter for a grower to be unable to supply his trade with fruit regularly, as he loses his customers and has to work up new ones when he again has fruit to dispose of. Again, fruit is always much better in price and much more easily sold in what is termed "off years."

Such accidents as frosts, unfavorable weather at blooming time, etc., of course cannot always be averted, but something can be done even in the case of frost by careful selection of the site of the orchard. As for drouth, the up-to-date orchardist can now successfully contend with conditions which a few years ago would have spelled failure.

If we are to have annual crops of fruit it is reasonable that we should perform such operations as cultivating, pruning, spraying manuring, etc., in our orchards regularly each year. The amount of such work must be a subject of much thought and study for each individual and may have to be modified for different localities, different soils and different seasons. A good orchardist should have some knowledge of what each tree is doing. If he has some written record of each tree, so much the better; if not, that record is written on the tree itself, if he is skilful enough to read it.

A good many years ago I remember seeing a fruit grower walking through his orchard, where the teams were drawing manure. He was directing the men to deal liberally with this tree; sparingly with that, and to skip another altogether. I wondered why he took so much trouble. I have found out since. In some cases manuring would prove beneficial; in others it would have prevented fruiting.

The chief points to be considered in preventing off years are:—

(1) Selection of buds and scions for propagation from trees of regular bearing habits.

This subject has not received much attention in practical orchard work; but every orchardist knows that he has some trees which bear more regularly than others of the same variety. Half a century ago Charles Darwin wrote:—"No case is on record of a variable organism ceasing to vary under cultivation. Our oldest cultivated plants, such as wheat, still yield new varieties; our oldest domesticated animals are still capable of rapid improvement or modification." He also refers to the great power of man in accumulating by his selection successive slight variations.

Let us see how the fruit grower is taking advantage of this knowledge. Nurserymen almost invariably cut their scions from blocks of young trees which have never fruited, and of whose productivity and pedigree they know nothing. (Frequently they are not even true to name). This mode of obtaining scions is followed year after year, and our young tree has a long line of ancestors, which never fruited prior to being propagated from. Are we not, then, failing to take advantage of this knowledge? Further, by propagating from stock that for many years has only reproduced by the vegetative process may we not impair the fruiting process? The modification may not be abrupt but it will tend in that direction. The time will come when we will want a pedigree with our trees. Our live stock breeders have long attached the utmost importance to this subject, and now we are to have pedigreed farm seed. By all means let us have pedigreed trees. The principle of variation is as great in the fruit bud as in seeds or live stock. Why not take advantage of it?

(2) Pollenization, by planting trees which bloom at the same time, and will fertilize each other side by side. For it is well known that many varieties of all our fruits are self-sterile.

(3) Cultivation, which should be begun early in the season, before the feeding rootlets—which are produced and die each year the same as the leaves—have been thrown out, so that we may not injure the tree by depriving it of its nourishment. It should be continued until about the first or second week in July. Thus assisting nature by surrounding the tree early in the season by the conditions favorable to new growth, and later in the season by conditions favorable to the transformation of the

leaf bud into the fruiting bud, both of these functions must necessarily be performed by the tree in each year, if it is to yield annual crops. We must have new buds, for when a bud blossoms it dies, and we must have the fruit bud or it cannot blossom.

Nature usually takes two years to complete the cycle; hence, the off year. It is the work of the skilful orchardist to complete it in one year.

(4) Picking, if carelessly done, may destroy the chances for a yield the following year. When the twigs are broken off with the fruit two years crop is picked in one. We have all seen, under a tree that has been carelessly picked, the ground carpeted with the small fruiting twigs.

(5) Pruning should be done while the tree is dormant, and should be light and moderate, so as not to seriously disturb the intimate balance between the roots and the leaf surface.

(6) Manuring should be done regularly, and should be suited to the needs of each individual tree.

(7) Spraying should be persistently and thoroughly done, not only to protect the fruits from insects and diseases, but to protect the foliage and keep it in good condition as late in the season as possible; for all plant food is elaborated in the leaves, and it is the rich plant food produced by them in the latter part of the season, in excess of what is required for immediate use, which transforms the leaf bud into the fruit bud, and this transformation continues as late in the season, and only as late, as there is a healthy foliage on the trees.

What is required by the fruit growers at the present time, is not so much new methods as an intelligent and thoughtful application of methods and knowledge they already possess, or which is within their easy reach.

GATHERING AND MARKETING FRUIT.

By Robert Thompson, St. Catharines.

It is conceded by every one that every effort should be adopted by the grower to produce fruit of the highest class with the smallest percentage of inferior and imperfect specimens, and thereby secure a higher price for the crop.

While we have growers who grow the best of fruit, some of these men are poor marketers, through lack of help in gathering and packing or proper packing houses. These men should sell to the factory or to the dealers. But in order to reap the full benefit it is advisable for the grower to gather and pack his own fruit.

All fruit should be picked when at the best, and at this point judgment must be exercised; tender varieties must be picked just before they reach the mature stage, but when they have received their full growth, and some colored varieties that will keep better must be allowed to hang until they gain in color and flavor. Some growers will persist in gathering all the fruit on the tree at one or two pickings, and some will pick every tree of the same variety on the same day. The pickers should be educated to gather only such specimens as have reached perfection or nearly so, going over the trees three or four times. It will be found that not only do we get better specimens, but that the fruit that seemed poor at the first and second picking, often will grow and color, and at the last picking will be equal to any at the first. The pickers should also exercise care in gathering so as not to injure the tree, and to handle so as not to break the fruit

spurs which contain the next season's crop, and to handle the fruit carefully so as not to bruise or injure it in the baskets nor to allow fine specimens to fall. If some do fall never place them in the baskets, but keep them by themselves to go to the factory or be canned at home.

In marketing under our present system we must either secure as many good merchants as advisable and sell and ship on order, sending the balance to the commission market, or send everything to the commission houses. While the former, no doubt, gives us very much better returns, the other means less trouble and labor in filling the order and bookkeeping. If the former plan is followed, varieties must be grown to keep up a succession and there will be an extra rush on some days to fill the orders. If the latter plan is adopted, some honest house should be selected to deal with in each market to which the producer ships.

The commission house, an essential adjunct to commercial fruit growers, is often assailed by the grower. Some of this criticism is just, but much of it is unjust. Growers often ship first to one house, then to another, and so on; not dealing with any one long enough to make a reputation, either for himself or his fruit. A good reputation with the commission merchant who handles his fruit is of immense advantage to the grower. If the merchant knows that his packing and grading is thoroughly honest he can safely sell the fruit without examining it, and often dispose of such lots on arrival at a good price. If on the other hand, he either knows nothing of the shippers' methods, or, as may too often be the case, he knows that his packing is faulty, he must see the fruit and examine it. This fruit must take its chances when the demand has been partially supplied and prices have been correspondingly lowered.

Some growers practise dividing their shipments, even in the same market, between several commission houses. This is unwise, as it brings fruit of the same class in competition with itself. The most sagacious growers refrain, as a rule, from dividing their shipments if the whole shipment be sent to the same market. To successfully handle fruit the best of business ability and keen foresight must be exercised, and where these qualities are displayed the growers generally find fruit growing profitable.

The ideal way to market our fruit would be to establish central packing houses at convenient shipping points where fruit could all be graded and sold under a central management, and every grower receive the prices for the grades of fruit he produced. Good growers would be encouraged and be well paid, and poor growers either be made to produce better or be forced out of the business. This system is being introduced in a small way in a few places, and will assuredly grow in favor.

GROWING FRUIT FROM A COMMERCIAL STANDPOINT.

By Elmer Lick, Oshawa.

In order to make a commercial success of apple growing it is necessary to understand the requirements of the market. The fruit markets of the world require large quantities of high grade fruit, uniform in quality and well packed. A commercial orchard should be made up of varieties succeeding well in that section, should be cultivated, fertilized, pruned and sprayed according to the special requirements of soil, expense, water supply and presence of fungus and insect pests.

On a farm of 100 acres about four or five acres of orchard will probably give best results. I am speaking now of a farm where mixed farming is the practice. This orchard should be the best land, and if the situation will allow, have it located on the west and north sides of the buildings. Plant a wind-break on the west and north sides of the orchard, using Canadian Spruce, Norway Spruce, and Cedar, placing them about 15 feet apart with a second row opposite the vacant spaces. The object is to break the force of the wind, yet allow a free circulation of air. Do not plant a row of apple trees nearer than 40 or 50 feet to this wind-break, otherwise there will be danger of encouraging scab and insect pests. Plant 30 feet apart, or if fillers are to be used 40 feet or more, and early bearing varieties intermediate, these to be removed as soon as they begin to interfere. Slant the young trees towards the prevailing wind. Have soil well prepared. Dig large holes, and plant thrifty trees therein. Take good care of the orchard until it becomes of bearing age.

Hoe crops should be used for several years. A clover crop every third or fourth year will be very good. Do not grow and ripen a grain crop.

The cultivation of an orchard is an important factor and requires careful consideration. Usually a bearing orchard will give best results when plowed or otherwise stirred to a depth of three or four inches early in spring and kept stirred with harrows and cultivators until about the middle of July, then sowing a cover crop of buckwheat or rape, using clover every fourth year or so. There are soils in Ontario that have an available supply of moisture at all seasons of year that require little or no cultivation. The purpose of cultivation is to hold moisture for use of trees. If there is plenty of moisture it is not necessary to cultivate except to assist in making unavailable plant food available. A liberal mulch of strawy manure often serves all purposes of cultivation. The poorer the soil and the less manure furnished, the greater need there is of thorough cultivation. Where an average soil cultivation is practised if six to eight loads per acre of good barnyard manure is furnished every other year with say 25 to 40 bushels of good unleached ashes the alternate year, enough fertility will have been furnished for growth of good crops of apples. Regulate the cultivation and manure so that there is an average wood growth of four to five inches.

Pruning is important and necessary. Every man should prune his own orchard. Not more than one quarter of living top should be taken out at one time. Cut limbs close with a sharp saw. Small limbs may be cut with hand shears. Start young trees with a centre leader, and then branches placed four inches apart and equally distributed. Do enough thinning towards end of limb so that centre part of tree may continue to live and bear fruit. Our ideal should be a tree full of fruit right to heart. The old style of pruning drove the bearing wood away from trunk of tree. Paint wounds over three-fourths inches with good white lead paint stained if you like to resemble bark of tree. A gentleman the other day at an institute meeting in Mount Forest advised the use of linseed oil and rosin, mixing while both were hot.

As to density of foliage, if a person will go in June about noon and take note of how much sunshine reaches the ground he will be able to determine pretty accurately whether his trees are too thick. If sunshine comes through here and there it is right.

Now there remains spraying. This is becoming more and more necessary. In the southern and western parts of the Province it is absolutely necessary to spray for all varieties, while not true to same extent in other parts of the Province, nevertheless it will soon be impossible to grow good

crops without protecting from fungus and insect pests. Much spraying has been done the last few years that was really not spraying. To be effective the mixture must be properly made and properly applied. There must be a clear understanding as to the work to be accomplished and how to do it. The time is no doubt at hand when power sprayers will come into general use; when planning to spray get best literature and study thoroughly and do work thoroughly. A commercial orchard or one that pays best is where best varieties and good trees are planted, on good soil; where a mulch of cultivated soil or manure holds for use of tree a liberal supply of water and fertility, and where reasonable pruning and thorough spraying practically complete the requirements necessary for best results.

THE TOMATO.

By W. E. A. Peer, Burlington.

When dealing with the growing and marketing of tomatoes we are discussing an industry that has practically developed in modern times, one that has developed rapidly and has to-day reached a proportion little dreamed of by many people. Farmers and gardeners in sections where the tomato was little known a few years ago are now producing it by the acre, as a regular crop upon their farms, and it has become one of the leading foodstuffs of the present time. The rapid increase of this crop has necessitated an increased knowledge of its cultivation and a relaxing of the pampered or fanciful systems of culture to be found in a well kept house garden, to the rougher and more general conditions and environments incident to an ordinary field crop.

It is not my intention to discuss or recommend the fanciful methods of tomato culture, such as training to hoops, rigorous trimming and tying up to trellises, or other such methods. These systems I know little about and do not practise, as I feel sure that the loss of time and the expense required for the production of tomatoes in this manner would be of greater value from a financial standpoint than the tomatoes are often worth after they are produced. My object is to discuss the methods of the commercial man for producing this crop as a financial investment and in wholesale quantities.

The growing season in the Province of Ontario is not sufficiently long to carry on this business entirely in the open air. In order that a satisfactory percentage of the fruit may ripen it has been found necessary to have plants of a fairly good size by the time the ground is well warmed in the spring and all danger of frost is over. The tomato plant is very susceptible to cold and a very light frost will injure it. For the production of these plants we have to resort to the use of hotbeds or greenhouses. As few people have greenhouses unless engaged in the production of flowers or vegetables on a large scale for market purposes, we will consider the more general system of producing the plants in hotbeds.

The first essential in the construction of a hotbed will be the procuring of a sufficient quantity of suitable soil some time in the fall. It is necessary to obtain this soil in the fall because the hotbeds will need to be started sometime during the month of March, and the ground is frequently frozen up then, and often covered with snow, so that procuring it then might be a very difficult task. The soil should be piled up near the spot where you intend to have your bed and covered over with straw or manure,

to keep as much frost out of it as possible in order that it will handle easily when required. The soil for this purpose should be rich and mellow and contain about one-fifth in volume of medium fine sand. Obtain earth entirely free of weed seeds, or as nearly so as it is possible to get it, or considerable trouble will be experienced in keeping the weeds down. Weeds growing in a bed encroach upon the space intended for the plants and cause them to be weakly and of a spindly nature.

The size of a frame to be used in constructing a hotbed will depend entirely upon the dimensions of the sash and the number of sash to be used to a bed. The size of the sash that is commonly used is three feet by six feet, consequently the frame usually made is twelve feet by six feet in order to accommodate four or five of these sash. Three pieces of two by four inch scantling are inserted in each frame three feet apart to support the sash as they slide up and down upon the bed. The board on the back of the frame should be about eighteen inches wide, that on the front twelve inches. When the frame is in position have it slope as nearly to the south as is convenient. As the time draws near for constructing the bed, a quantity of manure, suitable for hotbed purposes, must be on hand. Horse manure containing a moderate amount of straw will be found to be the best to use. Place the manure in a pile in order to start fermentation, then as soon as a good heat has developed fork it over and place in position for the bed. The pile as finally constructed should be one and one half by two feet deep, and large enough to support the frame and extend beyond it a foot or two on all sides. When building up the pile of manure care should be taken to have it well tramped down, for if such is not done it will heat up rapidly, fire-fang, and soon cool down and become useless. But if it is tramped properly the heat will be given off much more gradually and its usefulness will be apparent for about six or eight weeks. After the frame has been placed upon the manure bank it up to the top around the outside. It is then ready for the soil. This should then be put in to a depth of five or six inches, pulverized and levelled. Place the sash on the bed and do not plant for a few days. If planted immediately the bed may heat up too rapidly and become so hot as to destroy the germs of the seeds, but after a few days have passed the temperature will become more uniform and it will then be safe to sow.

The foundation of success in tomato growing as in other crops rests in good seed. If the seed is not first-class we cannot expect good results so that the selection and saving of seed is of prime importance. Where seed is furnished from seedsmen the grower has no control but must accept what is placed upon the market. Where seed is obtained from tomatoes grown on your own place the following points should be observed:

1st. Select the earliest fruit.

2nd. Select large fruit.

3rd. Select fruit of good shape and smooth, from healthy productive vines.

4th. Do not pick the fruit until very ripe, not until five or six days after all signs of green have gone.

If the seed is thus selected, properly saved, and kept dry, its vitality should last for several years. To save the seed properly it should be washed free of all pulp and thoroughly dried. Too much of the seed should not be put together when fresh, or it is very apt to heat and be spoiled.

When the bed has reached the desired temperature for sowing, mark it off in drills four inches apart, and sow the seed in these drills. Do not sow the seed too thickly. Cover it to a depth of one-half inch. After the sowing and covering is done press the soil down level and firm with a board or something of that description.

The beds, from the time they are planted until the plants are ready for the field, will require careful attention if a successful and profitable stand of plants is to be secured. The heat should be kept as uniform as possible and about the right temperature for steady growth. Too much heat will cause drawn delicate plants, while too much cooling off of the bed will produce stunted weaklings. Of the two evils it is better to err on the side of having too much heat, as the tomato is not adapted to stand any degree of cold. As soon as the plants are up and have developed their first true leaves they will need to be transplanted into new beds in order to give them more room to develop. Many growers transplant a second time before finally removing to the field. This is not absolutely necessary unless the plants are encroaching upon one another. They require plenty of room in order to grow stalky, strong and healthy. Remove the sash from the beds during bright warm days for a while before the time of planting draws near, and also allow the beds to remain open at night the last few evenings before removing the plants to the field so as to accustom them to the open air.

When selecting a spot for a tomato patch avoid poor land. Soils that are not in good condition will produce small, badly shaped and wrinkled tomatoes. Sandy or light clay loams if well drained, well manured and thoroughly cultivated give the best results. Have the soil prepared as soon as possible in the spring. It will then warm up much earlier and will cause a great many of the weed seeds to germinate and these will be easily destroyed by a stroke of the harrows just before planting.

A tomato plant when set out in the field requires from fifteen to twenty square feet of space for proper development. Some growers set out their plants four feet by four feet apart, others five by five feet or five by four feet, according to the variety. The system whereby we have the five foot space will prove to be the most advantageous. The wider space enables one to keep up the cultivation a little longer and will be found very acceptable when picking time comes. The danger of trampling down vines and tomatoes will be much lessened.

A few hours before commencing to remove plants from the bed to the field, soak the soil in the beds to the lowest extremity of the roots. You will then be able to take up the plants with a considerable ball of earth attached to each one. When setting the plant in the field bury this ball below the surface a few inches. If the plant has not been properly grown, but has become long and slender, place it in a hole on a slant so as to bury a considerable portion of the stem which will soon send out roots and assist in feeding the plant. If this long stem is left above the ground the plant is very apt to be switched about with the wind and become broken off and destroyed.

Start the cultivator going as soon as the plants have been set out, and keep at it at frequent intervals until the plants are well developed and about ready to commence maturing their fruit. A good many growers advise banking or mounding up around the plants to a height of two or three inches for the purpose of obtaining a more even spread or distribution of the branches over the surface and also to ward or drain off water and thus lessen the tendency to rot. The only training or attention along this line, that tomatoes require in field culture, is to see that the branches of the plants distribute themselves on all sides and do not clump together or interlace in a solid mass in one direction.

As the season of the ripening of the tomatoes draws near the producer must have on hand a supply of packages for the handling of his crop. These of course must be suitable for the market for which the tomatoes

are intended. If intended for the early market or local retail trade baskets will be chiefly used. If for the canning factory or for disposal in large quantities bushel crates or boxes will be required. When placing fruit upon our markets the returns will in a large measure depend upon the amount of skill and intelligence exhibited by the picker and the packer in putting up the goods. All fruit if properly packed will be of uniform size and ripeness. All blemishes or ill-shaped specimens should be discarded. Place the fruit in the basket with the stem end down, wipe all soiled tomatoes and finish off with a smooth and level surface. If the fruit is thus put up in a neat, clean basket; fruit uniform, bright and clean, and tastefully packed, the possibility of making a good bargain with the consumer is far greater than would be possible where as good a quality of fruit was offered dumped into the baskets any old way to get the baskets full.

Producers of food stuffs of all kinds must bear in mind that in the consumers of their goods they have a taste to satisfy and an eye to please, and that unless they make the article they have to sell agreeable and pleasing to both senses they will loose in a measure the appreciation of the eye and the palate. Fruit growers and market gardeners will not discover the secret for increasing the demand for the various articles they produce, many of which have reached the limit of production as far as profitable returns are concerned, until such time as a larger market and increased demand is created.

SMALL FRUITS ON THE FARM.

By Fred. A. Sheppard, Queenston.

A sufficient amount of all the small fruits to supply the family while in season, and also enough for preserving for the winter months, should be found on every farm.

Fruit is a luxury, the eating of which is both pleasing and healthful, and who has a better right to enjoy it than the man who tills the soil. Still I find a great many of our farmers fail to place these luxuries within the reach of their family.

The reason given by most farmers for not growing some small fruit is that they haven't time to look after it, and that the hoeing and weeding that is necessary is too slow and tedious for them. I will admit that the bane of growing small fruit is the weeds, and if we do not spend a little time in cultivating, hoeing and fighting weeds, we cannot expect to harvest full crops. Still if we start right and do the cultivating at the proper time, we will have no trouble in keeping clean the necessary amount to supply the family.

Now I said start right. I am afraid some farmers have not done this. The majority of farmers seem very scarce of land when laying out a garden, and usually make it so small and plant their plants and bushes so thickly that the work of cleaning all has to be done by hand. Don't be afraid of a little bit of land. We all have more than we are working to the best advantage. Give your trees and vines plenty of room so that you can do the greater part of your cleaning by horse power, and then make it a point to give the garden as good care and cultivation as you do your other hoed crops. If you do this you will soon realize that the fruit garden is the most profitable piece of land on the farm, for it will supply a large amount of luscious healthful food, which will lessen the grocery bill, the butcher's bill and also the doctor's bill.

A few words about the cultivation of some four small fruits in order of ripening.

Strawberries. The strawberry may well be called the king of fruits. It has many good points to recommend it, some of which are:—It is the first to ripen in the early summer. It comes into full bearing in about 13 months from planting. It will produce more bulk of fruit per acre. On account of its creeping nature it is easily protected in winter in cold sections, by covering with straw, leaves or cedar boughs, and it succeeds well on nearly all kinds of soil.

Planting. Plant in the spring on land that has been well cultivated and fertilized the year previous. We plant in rows four feet apart and the plants two feet apart in the row. When the runners start we let them fill up between the plants and spread out sidewise until the rows are from 15 to 18 inches wide.

Varieties. There are two species of strawberry plants known as staminate and pistillate varieties. The latter has an imperfect blossom, and will not produce fruit when planted alone, but does very well when planted along with some of the staminate sorts in the proportion of one of staminate to two or three of pistillate; but as we have a great many good varieties of the staminate or perfect blossom kind there is no necessity of planting any of the imperfect kinds. In growing strawberries for home use we should aim to have as long a season as possible, and for this reason I would advise planting a few each of an early, a medium and a late variety. Three good ones are:—Beder Wood, Clyde, and Williams.

Cultivation. After planting cultivate at least once a week, and hoe often enough to keep down all weeds during summer. In the fall when the ground becomes frozen sufficiently to bear up a wagon cover lightly with straw or coarse manure say 1½ inches deep. After danger of heaving by frost is over in spring rake off this mulch and tramp it down firmly between the rows where it will perform a double purpose of retaining the moisture and keeping the berries from becoming sandy.

Raspberries. This berry succeeds best on light warm soil. The red varieties are propagated by suckers that come up from the roots of the old plants, the black caps by tips. The young canes grow up, turn over and the points take root in the soil usually in August or September. In most sections the reds are cultivated in rows six to eight feet apart and the plants 2½ feet apart in the row. Then let the suckers fill up between to form a solid row. The blacks are usually planted in hills four or five feet apart each way. In order to get a big crop of large berries it is necessary to give a liberal application of manure and good clean cultivation. I have found of late years that I can keep up the size of my berries much better by cultivating right through the picking season. Run through with the cultivator after each picking to stir the soil, break up the crust formed by the tramping of the pickers and to form a mulch. An important point in raspberry growing is the summer pruning. As soon as the young canes reach a height of 3 feet, usually about the middle of July, we go through and cut off the ends of the canes. This checks the upward growth, makes them grow stocky and causes them to ripen up and form a better quality of wood, which is not so apt to freeze back in winter. We usually remove all dead wood and surplus canes in the spring. Three good varieties are:—Marlborough for early, Cuthbert for main crop, and Golden Queen the best white variety.

Blackberries. This berry plays a very important part in the farmer's fruit garden on account of its long fruiting season. It begins to ripen about the time the raspberries are done, and continues fruiting for from

six weeks to two months. It is propagated by suckers and does its best on warm light soil, but does well on any soil that is well drained. Plant in spring in rows eight feet apart, and 2½ apart in rows, and let it fill up between into solid rows. Give annual pruning in spring, and don't forget the summer pruning. As soon as the young canes get 3½ feet high, nip them off. If this is not done they will run up 6 or 8 feet high and make a soft cane that is almost certain to be frozen back in winter. My own system of cultivation is to plow up to the bushes in late summer or early fall, and then work down in spring with cultivator and hoe, and like in the raspberries we cultivate frequently right through the season until the fruit is all off.

I have obtained best results by fertilizing with barnyard manure and wood ashes. Some of the best varieties of this berry have had to be discarded on account of not being hardy enough to stand our Canadian winters. Three good hardy ones are Agawam, Snyder, and Western Triumph.

THE FARMER'S LAWN AND FLOWER GARDEN.

By Wm. Hunt, O.A.C., Guelph.

One of the greatest charms of farm life in the old land, more especially in the south and west of England, is the delightful lawns and gardens usually found surrounding the cottages and farm houses. Visitors from all parts of the world admire the many rural landscape and floral beauties of the old land, more especially those of farm and cottage homes. And it is no wonder that those who have lived amongst these surroundings, whether in the hey-day of childhood and youth or the more mature years of life, never forget them; and the mere mention of the old ivy-clad village church or the jasmine-covered porch of the old home brings pleasing recollections to those who have lived amongst or even visited casually the peaceful, quiet beauty of the rural districts of England.

Whilst from climatic conditions, and short spring and summer seasons, we may as a rule not be able to have such elaborately laid out gardens and lawns as exist there, still there is no reason why every farm homestead cannot have a small grass-plot and flower garden in close proximity to the farm house.

Make the surroundings of the homestead more home-like and attractive. It is no wonder that sometimes the young people are lured away from the farm where ofttimes there is little but the regular routine duties of farm work to interest them or occupy their attention. Give the young people, more especially the young ladies of the family, a flower bed or border and lawn. The latter should be large enough so that the members of the family can enjoy a game of croquet or tennis, whenever a few minutes' time can be spared for recreation and pleasure, from the sometimes heavy and onerous duties pertaining to farm life. Have a few rods of perhaps your many acres set aside for home enjoyment, it may prevent the tendency of so many of the young people from wishing to leave the farm, for the gay and—what proves too often to be—the delusive and ruinous surroundings of city life. A small lawn and a few shade trees with some plants and flowers are not expensive luxuries to obtain, and will not cost much to maintain and keep up when once secured. A nice grass plot or lawn adds most decidedly to the attractive appearance of a farm home and also its marketable value, without adding any extra figures to the assessor's tax roll.

I have been led very largely to make these remarks from the fact, that one has only to notice the pleasure and enjoyment that the members of our Farmers' Institutes—more especially the ladies—derive, when they visit the greenhouses and grounds of the O. A. College during the June excursions. The close interest shown by the students at the college when taking up the practical part of floriculture which forms a part of their regular studies during the second year term, also convinces and assures me, that not only they themselves, but the rest of the family at home, are deeply interested in how to beautify and decorate the surroundings of their farm homes. Their success in the propagation and culture of plants, as well as the interesting and encouraging reports of how the collection of plants raised by the students themselves were appreciated at their homes, is ample evidence of the increasing interest being shown by our farmers in regard to beautifying the surroundings of their homesteads.

The prettier and more attractive the farm home and its surroundings are made, the lighter and pleasanter will be the labors of the farm. And whatever tends to increase the beauty or attractiveness of the home, also tends to make hearts truer to home. And what is there that adds more to the quiet peaceful appearance of the surroundings of any home than do a few shade trees and a few plants and flowers. Much has been done in this respect by many of our farmers during the past few years, still there are many otherwise beautiful homes, that need only a sprinkling of foliage and flowers to make them more beautiful and home-like.

I will endeavor to give a few practical hints and descriptions in a general way as to the best and most inexpensive means to make the farm home look cheerful and attractive, without incurring a very large outlay either of money or labor.

The Lawn or Grass Plot. This should be fenced off with a fairly closely built picket or small meshed wire fence, so that fowl and other animals can be kept out of it. Climbing and trailing plants should be planted close on the inside of the fence about every twelve or fifteen feet (a bare picket fence does not add to the beauty of any lawn). Perennial or permanent climbers are the best for this purpose. Annual climbers, or climbers raised from seed, are an annual trouble, and oftentimes an annual failure, and even when they are a success the season is nearly over before they attain to their full beauty. Permanent or perennial climbers are effective as soon as they break into leaf in the opening time.

One of the best and most reliable of our permanent climbing plants is the old-fashioned Virginia Creeper (*Ampelopsis quinquefolia.*) The *Aristolochia sipho*, or Dutchman's Pipe, as it is commonly called, is a very dense quick-growing climber. Its large insect-proof leaves overlapping each other as they do, make a close dense covering for a fence or building, but unfortunately it is not hardy in the northern sections of the Province. The Trumpet Vine, or the *Bignonia radicans*, is another beautiful climber, and almost entirely hardy in most sections.

Two more good hardy and reliable climbers are *Clematis Virginiana* and *Clematis vitalba*, or Travellers' Joy. Both of these make very pretty climbers for a fence or trellis. Some of the rarer kind of Clematis such as *Clematis Jackmanii* and *C. Henreji* and others are most beautiful, but are more suitable for growing on a wire trellis around the house or verandah than for covering a garden or lawn fence. The one annual climber that I would recommend for covering a fence quickly and easily is the cucumber vine. A few seeds of this vine sown in May or June where the plant is wanted to grow, will soon produce plants that will grow quickly and cover a large space. When in flower the wild cucumber vine makes

a splendid appearance with its feathery-looking sprays of white flowers and its large green leaves. This plant will seed and renew itself without any trouble of sowing seed again for several successive years. The wild cucumber is eminently suited for the farm garden. Climbing Nasturtiums, Morning Glory, and Japanese Hop are all good annual climbers and can be grown easily from seed sown in May where the plants are to grow. The *Cobea scandens* is a good climber and succeeds well in light rich soil. *Cobea scandens* seed should be sown indoors in pots or boxes about the end of April or early in May, and grown inside until June, when they can be planted outside after danger of frost is over. The Cobea is a beautiful climber and succeeds well out of doors during summer. It is really a greenhouse perennial, but is usually grown as an annual from seed. All of these climbers are pretty and easy to grow, but the two easiest to grow and the most effective, whether for a fence or trellis work, are the Virginia Creeper, and the wild cucumber vine.

The grass plot itself never should be exactly a dead level, it should in all cases have a fall of at least one inch in every eight or ten yard. The fall should always be away from the buildings, so as to carry off surface water freely. The best time to start making a lawn or grass plot is in the fall or early spring. The rough grading should at least be done in the autumn. Early in the spring, harrow or rake the surface very fine. Then sow a mixture of equal parts of Red Top grass, Kentucky Blue grass, and Dutch Clover. Sow a half pound of this mixture to every square rod of ground, and sow as early in spring as possible, and on a calm day. The seed should not be harrowed or raked in heavily. A brush harrow drawn over it once or twice is the best method of covering the seed, if the ground is in the right condition. A brush harrow can easily be made by tying a few bushy maple boughs together in a spreading manner. Do not use the lawn mower the first summer. Once or twice cutting with a scythe will be the best. In fact, all lawns that cannot be kept well watered in hot weather should be cut with a scythe in preference to a lawn mower. A mulch of well-rotted manure, or better still a mixture of good loamy soil with the manure in equal quantities applied to the lawn in the fall will be of great benefit. An inch in depth of this mulch will not be too much. The grass on an old lawn will also be very much improved by a mulch of this kind every fall, or at least every alternate autumn season. Give the lawn a good raking with a fine iron rake in the spring, and remove any stones or coarse rubbish, most of the mulch will be thus left, and will work into the soil. If there are any bare patches, rake the surface over well, and sow a mixture of the seeds as before recommended for a new lawn.

Planting the Grass Plot. Do not overplant. Many lawns and grass plots have too many trees and shrubs planted on them. A few shade trees should be planted. Place them near the house. Their shade will be very acceptable in the few spare hours a farmer has in the hot weather, and besides this they are great safeguards to buildings from lightning.

There is no better shade tree than the hard maple. The Norway and Manitoba maples are quicker growing, but neither are as desirable as the sugar maple. The Norway Maple is the better of the other two. The soft maple grows quickly, but does not make a good shaped tree, and is very liable to splinter and break down with heavy rain and wind storms. The horse chestnut is a quick grower and looks pretty especially when in flower, but is more rubbishy than the maples.

Shrubs. Do not crowd the centre of the lawn with large strong growing shrubs. By all means plant a lilac or two away at the end or side of

the grass plot, but don't plant them out in the open lawn. They are too large for this purpose unless the lawn is very large. Plant them where they can grow without having to be clipped or pruned back every year to keep them within bounds. You will then get plenty of thin sweet panicles of blossom that look so pretty when cut and placed in a vase or jardiniere. The best varieties to plant are the old fashioned ones. *Syringa vulgaris alba* (white) and the purple of the same type are about the best lilacs yet. The Persian lilacs (*Syringa Persica*) are very nice and a little later flowering than the first mentioned. Many of the New Hybrid lilacs are very pretty, but not as enduring or as free flowering as a rule as the older varieties and are expensive. *Syringa Japonica* is one of the best Japanese lilacs, its feathery plumes of white flowers coming in when most of the other lilacs have done flowering. Other good shrubs for planting in the background or near the fence are the *Cydonia Japonica* (Japan Quince), and the pink and white varieties of the Tartarian or Siberian Honeysuckles. The pink variety is particularly pretty. All of these will make a bush eight or ten feet in height, and from ten to twelve feet through them. A good large specimen of the latter variety when covered with its light pink sweet-scented blossoms is a pretty sight. The *Philadelphicus Coronarius* (Mock Orange), and the *Caragana arborescens* or Siberian Pea shrub are both large shrubs, and good hardy fine flowering kinds. One more shrub must not be omitted, that is the *Ribes aureum* or American currant. Its bright yellow flowers emit a delicious odor that will perfume a whole garden.

For dotting about here and there on the lawn, *Weigelia rosea, Spirea Van Houteii, Deutzea crenata,* and *Deutzia gracilis* are pretty shrubs but I do not admire planting them thickly in the centre of a small lawn. Avoid planting spruce or cedars in the centre of the lawn where they will soon have to be clipped every year to keep them from overgrowing everything else, besides killing out other plants around them. There are no prettier trees than many of the spruce and cedars, but plant them either as wind-breaks a distance away, or in some position where they can have lots of room to grow and develop into the graceful pyramids of beauty which they do when given their proper position in landscape scenery. Spruce and cedar hedges or single trees if planted where they require clipping annually are a source of annual expense and trouble to anyone, as only an expert can clip a cedar or spruce hedge to make it look symmetrical and shapely.

If ornamental trees are wanted on the lawn, the weeping and cut leaf birch makes a beautiful tree. In the southern part of the Province the *Catalpa speciosa* and the *Liriodendron* or Tulip tree are handsome lawn trees. Some of the fancy Japanese maples are very pretty but not entirely hardy. Elm trees are only suited for large lawns.

The Mixed Border. No farm lawn or flower garden should be without a mixed border of plants and flowers, more especially the hardy perennial plants. They are very little trouble when once planted and will give a succession of blossom from early spring until late autumn if a good selection of varieties is planted.

The best place for the border is at the side or end of the grass plot. A border anywhere from six to ten or twelve feet in width from the fence can be had, or wider if necessary, but a border six feet in width is usually about wide enough. The edge of the border can be cut straight and parallel to the fence, or it can be cut in curves and bends if thought desirable. A curved edge is prettiest, but more difficult to plan and cut out than a straighter one.

The ground where the border is to be should be well dug and manured, and all perennial weeds such as spear grass, dandelions, thistle, burdock, etc., should be carefully dug out and removed. Early in the fall is the best time to do this. Some of the hardiest plants can be planted in the fall. The old fashioned Dielytra or Bleeding Heart, one of the prettiest and hardiest of our border perennials can be planted in September or October. German Iris and Paeonias can also be planted in the fall. Other kinds of perennial plants suitable for the border or flower garden are the Lemon Lily (*Hemerocallis flava*), *Gaillardia grandiflora*, *Coreopsis grandiflora*, *Aquilegia* or Columbine, the peach leaved Campanula or Canterbury Bell. The different colors of the hardy phlox (*Phlox Paniculata*) are grand late flowering perennials. The Oriental poppy (*Papaver Orientale*) is also one of the best and showiest border perennials. Its immense crimson scarlet flowers are very showy in June and July. All of those plants I have mentioned are suitable for the centre of the border.

For the front or edge of the border, the blue and white dwarf Canterbury bells (*Campanula carpathica*) are very pretty, growing only six or eight inches in height and forming large clumps in a short time. The pink and white dwarf phlox subulata or moss phlox, soon make a regular carpet of pink and white in May and early June. The perennial Candytuft (*Iberis sempervirens*) is another pretty dwarf early white flowering perennial. And the perennial Forget-me-not must be included, its pretty blue flowers being most acceptable in the early summer months. For a good background for these plants I have mentioned, the Rudbeckia or Golden Glow must not be forgotten, as it is one of the best and sturdiest of our hardy border plants. It must be planted at the back near the fence. Some of the perennial sunflowers are also very good for this position. The *Helenium autumnals superbium* and *Helenium striata* or Striped Helenium are also good autumn flowering perennials. Be sure and have a clump of Lily of the Valley in some odd corner. They are sweetly delicate for sprays and bouquets.

These perennials I have mentioned will of themselves make a grand display of bloom from early spring until fall, the second year after being planted if given only ordinary care and attention such as keeping down weeds, and forking over the ground in early spring. If a little well-rotted stable manure is forked in amongst them every spring it will help them. In about three or four years from the time of setting out, these plants will require to be dug up, and divided into smaller clumps, as they grow and spread rapidly. Early in May is the best time for this dividing and transplanting. All weeds should be carefully dug out of the border, and also picked out of the clumps of roots when this is done. A good coat of well-rotted stable manure should be dug in when the border is re-planted again.

If a few hardy rose bushes, and a few clumps of hardy lilies, such as Lilium candidum, the hardy white lily; and some of the old-fashioned Turkscap Lily (*Lilium Tigrinum*) often known as the Tiger lily are added as well as a Dahlia and Canna root or two in summer, a beautiful border can be had that will give its owner good returns and brighten up the garden and lawn from early spring until the snow flies again. Many of the plants such as Paeonies, Iris and the Lemon Lily are especially adapted for planting in clumps anywhere around the house if a regular border is not required.

Annuals.

If a few seeds of annuals such as Mignonette, Nasturtium, Phlox Drummondii, Ten Week Stock, Asters, Sweet Peas, Marigolds, and Zinnias are sown here and there amongst the perennial plants mentioned they will

help to fill up until the perennial plants are established, and besides will give a variety of form and color that will make the mixed border one of the most interesting and attractive features of the farm garden.

Any old plants of geraniums or any other border plants grown in the window during the winter can be planted out to help brighten up and make a variety in the mixed border. A few spring flowering bulbs must not be forgotten for the mixed border or for planting near the house. Tulips and Narcissi (*Daffodils*) are the best for this purpose, as they are hardier and showier than most other spring flowering bulbs, and naturalize themselves much better than many other spring flowering bulbs. The varieties of of Trumpet Narcissus and Narcissus Poeticus are the best kinds to plant. Hyacinths, Crocus, Snowdrop, Scilla Siberica, etc., look very pretty in early spring, but are not as well adapted for a mixed border as Tulips and Narcissi. Their bright blooms are very acceptable and pleasing in early spring time, and if not disturbed they will grow and increase in beauty for several years without requiring to be transplanted or renewed.

Arbors or Summer Houses.

This is one of the features of landscape gardening too often lost sight of, not only in connection with farm and country homes, but also that of city lawns and gardens, and I may add of our public parks and gardens also. The rose and jasmine covered arbors in connection with landscape scenery in almost all parts of the old world are too well known, and have been described both in prose and poetry by writers, that comment on them here is unnecessary. Especially where shade trees are not available, there is nothing that will add more pleasure to the garden than a rustic arbor covered with any of the perennial and annual climbers I have mentioned. The shape and size of the arbor is a matter of taste and convenience only. A few cedar posts, and a few yards of plain wire are the only materials really necessary besides the climbing plants. A light board or shingle roof can be added if thought desirable to make it more weather proof. A rustic seat or a few old chairs and perhaps a plain board table will complete what will prove not only a picturesque addition to the lawn, but also furnish a cool, airy, retreat when a few minutes can be spared for rest and quiet. By all means have a small summer house somewhere near the dwelling house, especially if no shade trees are growing near.

One word on climbing plants around the house. Never put climbing plants quite close to the walls of the house. Always have a trellis work of slats of wood or of wire, so that the plants can be kept an inch or two at least from the wall, more especially on the south and west sides of the house. Few climbers can stand the intense concentrated burning heat of either a frame, brick or stone building facing the south or west if the plants are trained directly to it. Air space between the plants and building should be had for several reasons. One reason is that the plants will grow better if trained a few inches from the wall, and again it gives better chance for one to apply insecticides to kill the insects that are so common to climbing plants especially. More people fail with climbing roses from planting them close to the walls, and planting them in a position facing south and west than from any other reasons. An east or north-east aspect suits climbing roses best, especially when planted close up to a building. Climbing roses would not suffer so much from the rose-thrip as they do if they were planted as I have stated. The rose-thrip is the very small white fly-like insect, that eats the foliage of the roses until the leaves become almost white in July and August. The best preventive of the attacks of these little pests that ruin so many roses is to plant as I have described,

and in May or June just before the flower buds open give the bushes copious sprinklings of water in warm weather, and a spraying of strong tobacco water once or twice a week from the time the leaves develop until the flower buds open. Spray on the underneath side of the foliage as much as possible, as that is where the thrip usually gets in its destructive work. A dry arid atmosphere suits thrip and the other rose pests, red spider, and aphis or green fly. By planting and training the plant a little way from the building the foliage gets more of the rain that falls, and these insects do not like water or dampness. Other pests that trouble both bush and climbing roses are the rose slug and rose chafer. A spray of weak Paris green solution or a dusting with dry Hellebore powder just before the flower buds open will usually prevent these pests from doing much injury. The Paris green solution should only be of about one half the strength used for killing potato bugs.

All of the climbing plants I have mentioned are more or less suitable for verandahs or trellis work around the house.

One other climber for the house should be mentioned, viz.: the Boston Ivy or *Ampelopsis Veitchii*. This is a true climber and clings to the brick wall tenaciously, and in a few years will soon cover the walls of a house. In the northern districts it is not entirely hardy, although it succeeds in most parts of the Province when once it has become established. The first winter or two it would be best to cover the plants with a thin covering of straw or corn stalks. A house or building covered with this climber is a very pretty sight. This is a real clinging creeper and should be planted close to the house as it clings to the house and needs no support of any kind.

Much more might be said about making farm and country homes bright and home-like, but I have already encroached too much on space to allow of saying more on the subject. I have endeavored to outline a few phases of home decorative art in plain words, and trust that what I have written may help a few of the many who are anxious to make their home surroundings picturesque and pretty, thus helping to give pleasure not only to themselves, but giving pleasure also to every one who sees them. Plants and flowers and pleasant surroundings have more to do with the framing and moulding of character than we sometimes give them credit for, and in their quiet way teach lessons that appeal to the better side of human nature in a manner that is oftentimes irresistible, and when perhaps more direct teaching and appeals may fail in the effect.

FARM FORESTRY.

By E. J. Zavitz, O.A.C., Guelph.

In the older parts of the Province many land owners are realizing that the wooded and waste portions of the land should receive rational treatment.

The early problem of the settler was to clear enough land to obtain food and a living. It was during this period that such valuable timber as black walnut was made into fence rails or burned in clearing operations. Then followed the exploitation of timbered areas for the direct returns to be obtained from the lumber. This has been carried on to the present day without regard to the future.

Much has been written and said concerning the present conditions existing throughout Southern Ontario. Arguments based on the relation of for-

ests to climate, flow of streams, winds, etc., are advanced to show the necessity of keeping a certain portion of the land wooded. However, we have reached the time when the value of wood products is such that rational treatment of the question is of great economic importance.

The conditions needing consideration may be divided into two general classes, the remaining portion of woods on the farm, or the farm woodlot; and the waste or non-agricultural portions of the farm. It would be impossible to outline detailed treatment for conditions which vary with every farm. Differences in locality, soil, etc., preclude this, but an outline of suggestions may be prescribed for the conditions which are general throughout the Province. The average woodlot is not producing what it should in kind, quantity or quality. Inferior species of trees compose a large percentage of many woodlots. Defective trees are allowed to remain taking up valuable space. Large openings have been allowed to run into grass so that no tree seeds are able to take hold.

Fire and grazing are two very injurious factors. No arguments need be advanced to show that fire and stock must be excluded if improvement in conditions is desired. Many woodlots contain over-mature trees with broad tops and unsound trunks. Frequently younger trees may be found which are defective from old fire scars, etc., and which are also hindering the development of better trees.

There also exists in many woodlots a large proportion of such undesirable species as the Ironwood (Ostrya Virginiana). These trees being able to endure the shade, come in as an undergrowth and thus crowd out the younger growth of better species. Also they are usually left during any cutting operations which gives them double chances to multiply. It is desirable that trees of this description be taken out as soon as possible and the space given to new growth. In felling the trees care should be taken to prevent destruction of surrounding young growth. Improvement cutting of this kind must be done with care lest open spaces be left with no chance to reproduce good species. In a very short time grass and weeds will take possession of the soil if it is left open to the light. If a new growth cannot be obtained from neighboring seed trees or artificial planting, it would be better to leave the trees stand for protection.

Gaps which are made by improvement cuttings, such as the above, should be planted if seeding from neighboring trees cannot be depended upon for reproduction. It may be better to plant in any case, so as to introduce better species. If the open space is large enough to admit plenty of light, it would be advisable to plant nursery stock of such desired species as White Pine, Norway Spruce, White Ash, Black Cherry, Black Locust, etc. In such planting, the hardwoods, as Ash and Cherry should be spaced about three feet apart. Conifers, as White Pine and Spruce should be spaced about five feet.

Another method of obtaining reproduction in such spots is by dibbling in the seed of nut trees. This gives better results than trying to handle nut trees as nursery stock. It is often better to keep the nuts over winter in some place where they may freeze, but be protected from squirrels and other rodents.

Another argument against fall planting is the danger of seed decaying during wet cold weather in spring. This danger is greater in clay than in sandy soil. In planting the nut, a hole from two to four inches is made with a pointed stick or dibble, and the nut dropped in, after which it may be covered by giving the spot a kick with the foot. This is a very simple method and could be carried out by a boy. Nuts should be planted two or three feet apart, each way, with acorns, walnuts, hickory, sweet chestnut, etc., four

inches is none too deep in sandy soil. If such planting is done in positions where cultivation is not practical the spots should be watched to see that no rank growth is allowed to shade out the small seedlings. After the second year it is probable they will take care of themselves.

Frequently there are gaps in the woodlot where considerable light has been able to reach the ground. Grass and weeds have taken possession and in some cases form a tough sod. This should be broken by surface plowing or by a disc harrow to enable seed to reach the soil.

In many woodlots, the second growth is composed of a large proportion of trees of coppice origin which is known as sprout growth. The stump of the old tree sends out sprouts which depend on the old root system for nourishment. The basswood is a good example of this characteristic. It is a common sight to see several small basswood trees surrounding an old stump Timber of this kind is usually not so valuable as that of seedling origin. The growth of such shoots is very rapid but the wood produced is of inferior quality. The growth and quality of the shoot depends on the age of the original stump. If the stump is very old the new growth may be almost useless. If the original tree was cut in or before its prime the shoots may produce fairly good timber for certain purposes. This condition needs treatment, and where a large number of sprouts are found coming from one stump it would be well to cut out all but perhaps one or two of the best.

On many farms there are portions of land which are of little or no value for cropping or grazing. Tops of hills and very steep slopes, which if cultivated would wash down very badly, could be planted with trees to advantage. In this case a double purpose would be served as the tree cover would protect the soil from erosion, benefit surrounding land and produce a wood crop. Rocky wastes, and weak sandy soils could be reforested to advantage by using white pine and Norway Spruce. These species are very hardy and have been planted successfully in drifting sands and on rocky formations where it seemed almost impossible to get enough soil to cover the roots of the small seedling. In such planting the trees should be spaced from three to six feet depending on conditions. If position is exposed, the closer planting will be better, as the ground may need more protection than a more sheltered place.

In light soil where no rank growth of weeds or grass would come in to choke out the young seedlings, no cultivation is needed. On steep slopes, planting should be done without breaking the soil to avoid severe washing. In such planting, seedlings of pine and spruce about the size of cabbage plants are to be used. Under average conditions a man and a boy should plant an acre in a day, which makes reforesting these lands a very practical proposition. On land which it is possible to cultivate and in which grass and weeds might kill young seedlings, it would be advisable to summer fallow the year previous to planting. After planting, cultivation could be carried on for one or two years after which the trees should take care of themselves.

The choice of species for reforesting work depends on various factors, as climate, soil, moisture, etc. The original distribution of trees in the Province should be our safest guide at present. While experiments should be made, still it would be unwise to do any extensive planting with new species, when we have so many that are known to be of economic importance. In the original distribution an arbitrary dividing line could be run from Toronto to Goderich .

Black walnut, sweet chestnut, shag bark hickory, black locust and the tulip-tree or white wood may occasionally be found north of this limit. However, there is a question as to whether they would give as good returns north

of this line as some more northern species. Species about which there is little or no doubt, and which are found throughout Southern Ontario, are White pine, red pine, white cedar (Norway spruce introduced), white ash, basswood, red and white oak, sugar maple, black cherry, white elm, and rock elm.

The forestry work as undertaken by the Agricultural Department is to deal with this question in its relation to the farmer. Advice and assistance is to be given in aiding him to improve the condition of wooded and waste land. Further announcements will be made with regard to methods of the Department in carrying out this line of work.

THE FARM WATER SUPPLY.

By Henry Glendinning, Manilla.

The farm water supply in the Province of Ontario has been in a state of transition ever since the country was first settled. The early settlers procured their supply of fresh water from springs that flowed out of the ground or from shallow wells, over which was erected the sweep, or the windlass with its "old oaken bucket." The water thus obtained was usually of excellent quality, the sources of contamination being very few, but as the forest was cleared off, these springs and shallow wells began to fail and many of them became dry. They were followed by deeper wells and wooden pumps, and farmers generally thought that they had reached perfection, or at least all that could be desired on the farm, by having two good wells with pumps in them, one being at the house, and the other at the barns. These did good service for many years, but changed conditions of agriculture came about, the live stock on the farm increased, and labor became scarce and expensive, which added to the cost of animal production; and above all the quality of water became poorer. Wells that gave excellent water when first put down gradually became impure by contamination from manure about the barns and from cesspools that frequently were not far removed from dwellings. Another source of pollution is from improper covers which allow toads, rats, mice and other vermin to fall into the well. Few people appear to realize that the large number of earth or fish worms that burrow through the soil and drop into the well are a source of pollution. One of the direct results of contamination is seen in those living on the farm suffering from typhoid fever. Human beings are not the only sufferers. The health of the live stock is affected.

Let us consider the requirements for the farm water supply. First, there should be thorough underdrainage from the dwelling and barns, so that all excess of water may be removed quickly. Second, a good supply of soft water for washing purposes; third, a never-failing supply of pure spring water for drinking purposes.

The drain or sewer from the house should be laid with glazed sewer pipe of sufficient size to carry off everything that may pass into it.

The soft water supply will be obtained from the rain that falls upon the roof of the dwelling, the best method of storing the same depending upon circumstances. A large tank in the upper portion of the house where it will not freeze will be found most satisfactory. There are, however, many difficulties to be met with in installing this system, such as lack of room, leaks, lack of strength of building, overflows getting out of order, etc. The majority of people will find the cistern the most satisfactory. This may be located

in the cellar, or outside of the house, preferably the latter, close to the kitchen. It should be built of the best Portland cement, covered over closely with a manhole in the top, and an overflow to carry off the surplus water to the drain. The water can be pumped through galvanized iron pipes to the sink in the kitchen, the pump being at the sink. A force pump may be used to force a supply into a small steel tank upstairs. This will be a great convenience in connection with the bath, where the water may be heated from the kitchen range.

The third requisite, that of a never-failing supply of spring water is the most difficult problem. I believe the great majority of the wells in the Province of Ontario should be filled up. The best source of supply will be found where the water springs up out of the ground, and runs off in a stream, provided there is no source of contamination near by. The easiest and cheapest way of conveying such water is by gravitation, provided the spring is higher than the buildings, but this is not usually the case. Then other methods must be used for forcing the water. Living springs are usually found along the lower portion of hill sides. Where the spring is of sufficient volume the pumping may be done by hydraulic ram, or a small water wheel attached to the pump; but usually the springs are not of sufficient force for those powers to be used. The next best power for pumping is the windmill, by which means the water can be forced any reasonable distance or height. A mill eight feet in diameter will do the work satisfactorily, provided that the cylinder of the pump is not too large. If the water has to be pumped for a long distance or very high, a two-inch cylinder will be found best, as it will run in a very light breeze. Remember that light breezes are more frequent than strong wind. There will be very few days that there will not be sufficient wind to run a mill of this kind. The piping should be of galvanized iron and of good size, not less than an inch in diameter inside measure.

There should always be a tank in connection with a water system of this kind, so that you are assured of a full supply at all times. It should be erected higher than the upstairs of a dwelling, or any portion of the farm buildings where water is required. If a convenient hill can be obtained that is higher than where you want to force the water to in your buildings, a tank should be placed in the ground in the form of a cement cistern where it will be free from frost, and covered so that no vermin of any kind can enter. Failing an eminence of this kind, a tank can be constructed of galvanized steel, wood, or galvanized iron inside a wood casing, which may be erected on a tower at some high point or placed in the buildings. If a high water tower is erected, care must be taken to prevent frost from getting at the stand pipe. This can be accomplished by digging what is known as a "dry well" below the tower and having the pipe pass up from this to the tank above. The pipe should be boxed in, having about a six-inch clear space. The boxing should be done with matched timber, with several plies of building paper between each covering of lumber. Use four coverings of lumber with a one-inch dead air space separating the several coverings. This boxing should run down to the top of your "dry well". The use of this well is to convey the heat that is always found in the ground up into the casing around the pipe. This will supply sufficient heat to prevent frost from freezing the water in the pipes. Hydrants should be placed in each building where water is used for stock. In the case of cattle water should be before them all the time. This can be arranged by an automatic shut-off. Hydrants and troughs should be placed in the fields where stock run, also in the garden and on the lawn. These can be shut off in the winter time when not in use.

Provision should also be made for a convenient supply at back of barn for use at time of threshing.

Many farms in Ontario have no living springs coming to the surface of the ground; their wells have to be depended upon. The location of a well should be a good distance from either houses or barns and where there is no chance for the water to become contaminated. Instead of having two wells, as is so common, try to have one good well with a strong spring sufficient to supply all requirements of the farm. This should be of large diameter so that it would hold a large quantity of water. It should be bricked or stoned up to within 8 or 10 feet of the top, and from that point to one foot above the surface with good concrete made from the best Portland cement. A close cover should be provided. This will prevent surface water or vermin passing into the well. There should be no hand pump or trough at the well for watering stock, as in course of time the soil will become contaminated thereby.

Owing to the high price of labor the day has gone by when the farmers of Ontario can afford to pump water by hand for stock either in summer or winter time. In some sections of the country good water is hard to find on each farm. In such instances it would be much cheaper and better for a number of farmers to co-operate and put in a system that would give them an abundant supply of pure water at all times.

BUILDING THE NEW BARN.

By A. P. Ketchen, Ottawa.

In our modern systems of intensive agriculture, in which all, or nearly all, of the produce of the land is fed to some class of live stock, and marketed in the form of live stock products, the stock barn is a very important part of the farmer's equipment. It is not enough that a man provide himself with first-class stock of the most approved type and breeding; nor is it enough that he feed his animals liberally and skilfully; if the most profitable results are to be obtained, the stock must be housed in sanitary buildings, so arranged as to permit of their care at a minimum cost of time and labor.

Under ordinary circumstances, a farmer builds but once in a life-time. It is, therefore, important that every smallest detail of the proposed new barn be carefully thought out before commencing operations, in order to avoid mistakes, which are, often, not easily remedied after the building is erected. Neglect to do this may result in an error that will be a constant source of regret for years.

Conditions differ so much in different localities, and even on different farms in the same locality, that to attempt to outline a model barn that could be adapted to the needs of all would be absurd. There are, however, certain main principles that are equally applicable under all conditions; and it is to a discussion of some of these underlying principles that I propose to address myself in this essay.

One of the most important of these principles is efficiency, or adaptability. The barn must be adapted to the purpose for which it is being built. That is to say, it must afford ample accommodation, under the most sanitary conditions, for all the stock that are likely to be kept on the farm; it must be adapted to the particular kind of stock to be kept;—if on a dairy farm, it must be suited to the requirements of dairy stock if the farm be devoted to mixed farming, the barn must be modified in certain particulars to suit the requirements of mixed husbandry—and it must afford storage for all the produce of the particular farm on which it is to be built. It is a foolish mistake to

build, on a two hundred acre farm, a barn suited only to the requirements of a hundred acres; it is equally absurd to build, on a hundred acre farm, a barn large enough for two hundred acres.

Another important principle, to be kept in mind in building the new barn, is economy; economy in first cost of erection, economy in cost of maintenance afterwards, and economy in time and labor, in the storing of hay and grain, and in caring for the stock. By the term economy, I do not necessarily mean a saving of outlay; economy may, and, in fact, does mean judicious expenditure. That man is most economical who, while avoiding all unprofitable expense, seizes every opportunity to invest money or labor where it is likely to yield him good dividends, whether those dividends be in the form of cash or in some other source of satisfaction. While, therefore, I do not endorse the practice of building fancy structures beyond the means of the owners, I do say, that, when a few extra dollars, expended here and there on a new barn, will add daily to the comfort and welfare of the stock, and be a lasting source of pleasure and satisfaction to those in charge of them, it is good economy to make the investment.

Great care should be taken in the selection of a site for the barn. It must, above all things else, be dry, preferably the crown of some slight knoll, or elevation. Until quite recently, it has been the prevailing practice to select the fact of a side-hill, and to excavate so that the stable doors would open on a level with the surface, while the back of the stable would be from two to four feet below the level of the ground. This has been found to be a mistake, and, especially in the clay districts, has been abandoned. If the subsoil be very dry, porous sand, or gravel, the objection to this practice is not so great; but on a clay soil it is next to impossible to secure a perfectly dry stable and yard on the face of a side-hill, and especially if excavated in the manner that I have indicated. Not only have we to contend with the surface water—this perhaps would be easily diverted—but there is a constant soakage from the face of a clay slope of this kind, that tends to keep the stable damp, and the yards soft and muddy during a large part of the fall and spring months. Good drainage will, it is true, prevent water from actually percolating through the walls into the stable, but even with the best of drainage the walls will be damp and cold, especially in the spring, when the ground is saturated with water. The floor, too, has been brought closer to the level of the soil water, and will be colder than if separated, by two or three feet of relatively dry earth, from the water table. To build on the level, or on the crown of some slight elevation, entails more labor in building the approach, but, apart altogether from better sanitary conditions, it is well worth the trouble. The barn looks better, adding considerably to the general appearance of the homestead; the foundation is apt to be better, because of the more perfect drainage; and the surroundings are more likely to be clean and dry, an advantage not easily over-estimated.

The barn should be far enough from the house to reduce the danger from fire to a minimum, to avoid contamination of the well by soakage, and to preclude any annoyance in the house from stable or barnyard odors. On the other hand, the distance should not be so great as to become an inconvenience. The various members of the family make a good many trips between the house and the barn in the course of a year; to shorten the distance, therefore, by even a few yards, effects a saving of time and energy that is worth considering.

Since our prevailing winds are from the north and west, it is desirable have the barn facing the south or the east. This locates the yard, not only

on the sunny side, but also on the sheltered side of the barn; it also minimizes the probability of cold winds blowing directly in at the doors when open, as they generally are during a part at least, of every day.

A good foundation, while not necessarily the most important part of a building, is at least essential to a good wall. While a good foundation does not insure a good wall, a defective foundation does ensure a cracked, unsightly, and short-lived building. Yet, strange to say, many, if not most, of the contractors building basement walls for farmers throughout the country, are

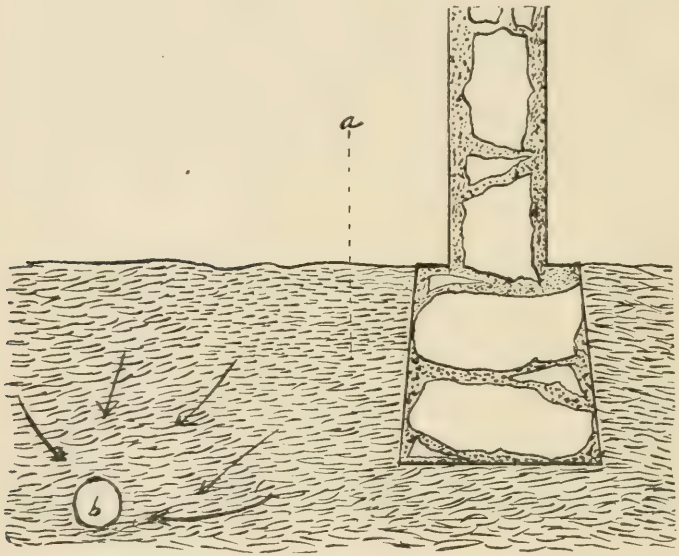


FIG. 1—End section of a good foundation and a well built concrete wall.

culpably careless about their foundations. The writer has seen many expensive, and, otherwise skilfully constructed buildings, ruined because of a lack of proper care and foresight on the part of the builders in the laying of the foundations, or footings.

The foundation required will vary with the nature of the soil. On a sandy, or gravelly site, there is no danger of injury from frost; it is, therefore, necessary to remove only the loose surface soil; but the footings should be wider than is necessary on a clay subsoil, to prevent damage from settling. On a clay subsoil, owing to greater liability to heave with the frost, it is better to lay the footings not less than twenty-four inches below the surface. It is not necessary, however, to give them so wide a base as on a more yielding soil. The foundation should be somewhat wider at the bottom than at the ground line, as shown in Fig. 1. When this is done the soil at A, on expansion with the frost, lifts off the wall, and does no damage. But if, on the other hand, the sides of the trench have been allowed to slope in a little towards the bottom, as in Fig. 2, the soil at A, on freezing, lifts the wall with it, and a damaged wall is the inevitable result. This mistake is a very common one.

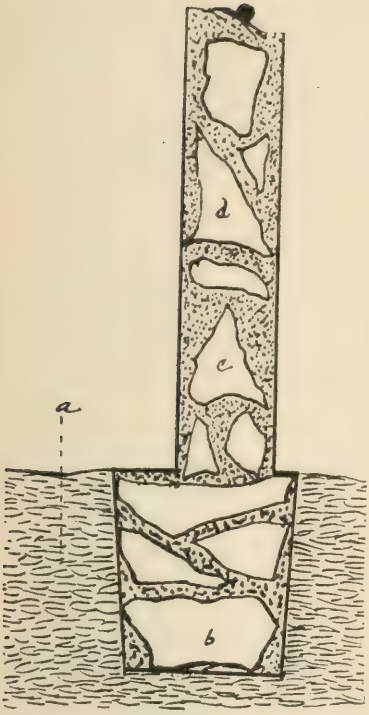


FIG. 2—End section of a bad foundation and a poorly constructed concrete wall. Note the foundation resting on the soil *A*, instead of the soil on the foundation, as in Fig. 1, the wall placed on one side of the foundation, and the wedge-shaped stones *C* and *D*, tending to split the wall.

When lining out the trenches for the foundations, care should be taken to place them so that the wall will come exactly over the middle of the footings, as shown in Fig. 1. A very common and inexcusable blunder is illustrated in Fig. 2. When the wall is placed on one side of the footing, as shown in this figure, the weight of the building tends to tilt the foundation and crack the wall. A crack due to this cause is usually longitudinal, especially in a brick or concrete wall. In a stone wall, cracks due to any cause are generally more or less diagonal, and in any wall, if due to unequal settling of the foundation, they are diagonal.

All foundations should be laid in cement concrete. It adds but little to the expense, and, if intelligently done, it ensures stability.

A very important, if not the most important, essential to a good foundation, is thorough drainage. A tile drain should be laid completely around the building about three feet from the wall, and, if possible, a little lower than the footings. This will keep the soil dry below and round the foundation, and will reduce to a minimum the probability of damage from either settling or heaving by the frost. It is well to remember that, in spite of the most careful precaution, all foundations settle a little.

It has been a very common practice among country masons to dig a trench of almost any shape and size, fill it with cobblestones, and make this imitation serve the double purpose of foundation and drain. If all the other conditions are favorable, a good wall can sometimes be maintained on such a footing, but the odds are heavy against it. The practice is all wrong in principle. The water, instead of being removed from the wall, is drawn to the very place where it is not wanted, softening the substratum, and bringing about the conditions most conducive to uneven settling and cracked walls. Another, though less serious, objection to this cobblestone foundation, is that it furnishes a harbor for rats, from which they frequently burrow underneath the concrete floors of the stable, and sometimes undermine them to such an extent as to cause them to settle and crack.

BASEMENT WALLS.

The material used for the wall, whether it shall be concrete, brick, stone, or wood, will be determined largely by the local conditions, chiefly by the ease with which the several materials can be obtained.

The merit of a good wall consists in:—

1. Durability—The material and the workmanship must be of such a nature as will ensure permanency.

2. Strength—The walls must be strong enough to support safely any weight that may be imposed upon them, and to resist any strain to which they may be subjected, as, for instance, violent wind storms. This strength should be obtained without undue thickness. A thick wall not only reduces the size of the stable, but also interferes with the lighting.

3. Insulation—The wall must be a non-conductor of heat, to facilitate the control of the stable temperature in any weather, and also to prevent the condensation of moisture upon its surface.

4. Economy in cost of construction.

5. Beauty—"A thing of beauty is a joy forever," and a handsome building is not to be excepted. Beauty in a barn does not consist in expensive ornamentation, but in a trim, tidy, substantial and consistent appearance.

In districts where clean gravel can be readily obtained, cement concrete fulfils all of these requirements admirably. It is, if intelligently used, the most durable material at our disposal. It is strong, dry, and warm; a twelve-inch concrete wall will carry as much weight, and turn as much frost as a twenty-four inch stone wall. It can be built for less money than either brick or stone, and, when properly finished, presents a very fine appearance.

Brick is also an excellent material for basement walls, perhaps equal to concrete in all other particulars than durability and cost. A good brick wall usually costs more than concrete, and it is less durable; but it is strong enough without excessive thickness; it is an excellent non-conductor; and it is quite attractive in appearance.

Stone, because of the relative ease with which it can be obtained in most districts, has, heretofore, been more largely used than any other material. In cost, a stone wall is intermediate between concrete and brick; it is more durable than brick, but, unless laid in cement mortar, less durable than concrete. If really good stone is used, it makes, perhaps, the best looking wall of the three; although tastes differ widely in this particular. The chief objection to stone is its dampness. Being a rapid conductor of heat, a stone wall condenses upon its surface the moisture in the atmosphere of the stable, and, as a consequence, is generally damp in mild weather, and coated with hoar frost in severe weather.

It is not my purpose in this paper to give detailed instructions for the building of the walls. That is the business of the mason, and, since it is above ground and subject to criticism, it is generally fairly well done I have described the foundations at greater length because it is in them, more often than in the walls that the farmer is imposed upon by the half-baked mason, too many of whom, I regret to say, are allowed to run at large.

Doors and Windows.

While the walls are in course of erection, the owner should be careful to see that the doors and windows are properly set and in their right places. A mistake of a foot or more in the placing of a door or window is a source of annoyance not easily remedied. Be careful, also, to see that stiff spreaders are kept between the jambs of doors and windows while the mason work is in progress. Without this precaution the frames will be crowded out of square by the pressure of the green wall.

Sunlight is not only the cheapest, but also one of the most efficient agents known for the destruction of disease germs. It follows, then, that the windows should be of good size and numerous. In a wall twelve inches thick, with the rays of the sun striking it at an angle of forty degrees, a window

sixty inches wide will admit nearly three times as wide a stream of sunlight as another that is only thirty inches wide; and if the wall be twenty inches thick, the one will admit, under the same conditions, more than four times as great a stream of sunshine as the other. Hence the economy of large windows and thin walls.

The doors should be wide enough to prevent undue crowding of stock while going in and out. Three and a half to four feet is about right for cattle. One of the horse-stable doors should be seven feet wide, in order that a team may be driven into or out of the stable without separating them. The door should always be in two pieces, so that the upper half may be left open if desired.

Floors.

Whatever may be said in favor of other materials for walls, there is nothing else in common use in Canada that at all compares with cement concrete for stable floors. When well put in, it is there for all time; it presents a smooth surface for cleaning without being unduly slippery; it is watertight, thus preventing the loss of the most valuable constituents of the manure; it is sweet, clean and sanitary; and it can be put in at a moderate cost, not exceeding that of a wooden floor with lumber at $15.00 per M.

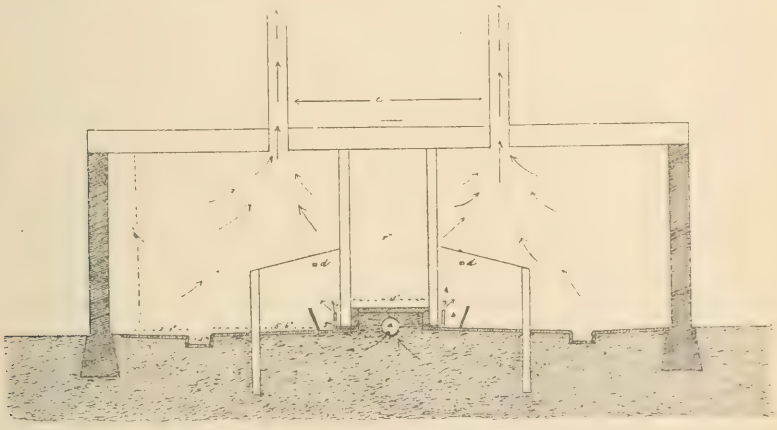
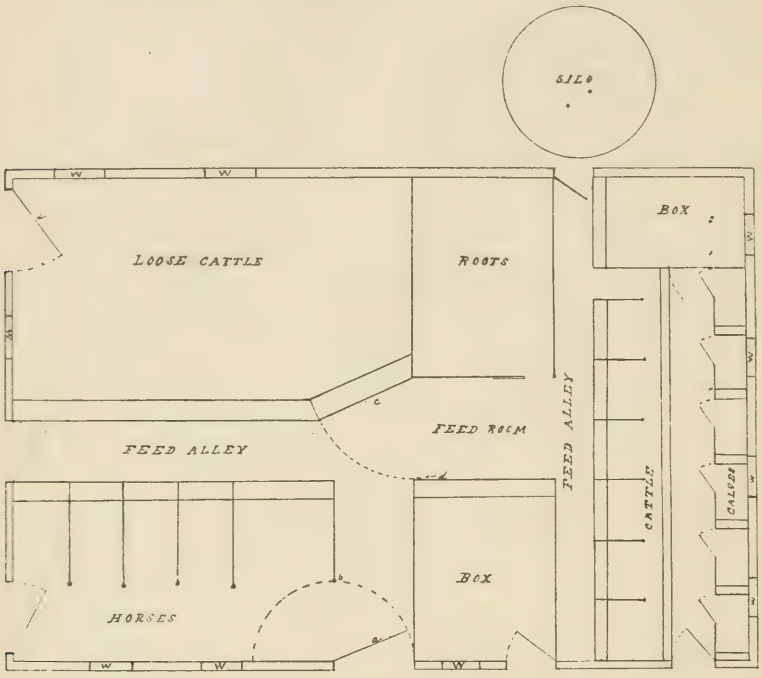


Fig. 3.—End section of a cattle stable, showing floor, elevated feeding alley and system of ventilation.
(*a*) Fresh air conduit.
(*b*) Distributing pipes.
(*c*) Foul air shafts.
(*d*) Scantling 4 x 4, to prevent cattle getting into mangers. This is the only obstruction necessary between the cattle and the feeding alley.

For the convenience of those who may wish to lay their own cement floors, I shall endeavor to describe briefly the method.

The first thing to be done is to grade the bottom carefully. To facilitate accuracy, stretch a line level with the proposed surface of the finished floor, and grade the clay to four inches below the line. Use a linen line for this purpose, as a cotton line will sag too much from its own weight. The floor should be perfectly level lengthwise of the rows of stock. Some men grade the gutter two or three inches lower at the door. This is a mistake, because all the liquid runs to the lower end of the gutter, and accumulates in greater quantities than can be readily absorbed by the litter. The alley behind the cattle should slope towards the gutter with a fall of not more than one-half of an inch in six feet. If it is given a greater fall than this, the cattle are apt to slip on it, and serious injury may occur. For cows, the stalls should be given about the same grade as that named for the alley; for steers, the fall should be about one and one-quarter inches.

If, in grading, it is necessary to fill up any low places, gravel, broken stone or clay may be used; the only precaution necessary is to ram the filling solid, in order that it may not afterwards settle away from the floor.



PLAN No. 1.—Barn 50 x 75, adapted to the requirements of mixed farming on a farm of 100 to 150 acres.

Note the location of the feed-room, and convenience for feeding. To clean out the loose cattle, the door (*a*) is fastened with hook to tail-post (*b*). The gate (*c*) with manger attached, is swung across the feed-room and attached at (*d*). A team can then be readily driven through this alley, and out at (*e*).

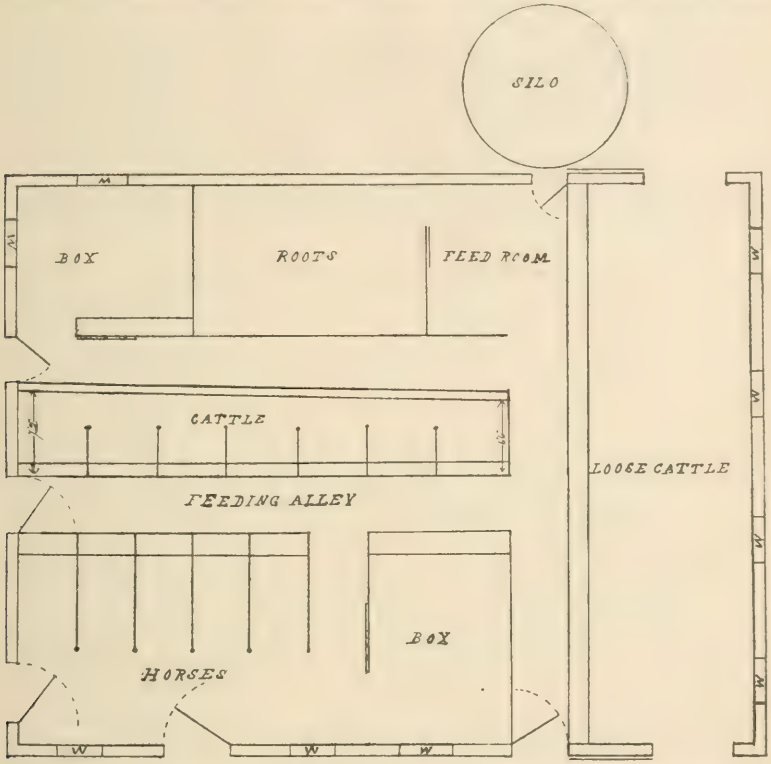
After grading, the posts should be put in. The tail posts should be set about three feet in the ground, and extend about the same length above the finished floor. (See Fig. 3). The posts supporting the weight of the superstructure should be set on large flat stones, or on concrete bases; and all timbers should be lined up plumb and straight before commencing to lay the floor.

If it is intended to use the system of ventilation recommended in this paper, the next operation is to build the retaining walls for the elevated feeding alley. (See Fig 3.) To build these walls, set two straight planks, twelve inches wide, on edge, six inches apart; stake them firmly to place, and fill with concrete, taking care to tamp the concrete well as it is being put in.

For mixing the concrete, make a mortar board about twelve feet square, using planks, or, better still, double inch lumber, breaking the joints. It is important that the mortar board be solid and present a smooth, level surface. Mixing concrete is no light work at the best; and, on a loose, uneven mortar board, this labor is unnecessarily increased.

We now require a guage for the gravel. This consists of the sides and ends of a box, without the bottom. Handles are nailed on the sides, so that when measured full of gravel the guage may be readily lifted off and laid to one side. The dimensions of the guage will be determined by the relative proportion of cement and gravel, and by the size of the batch to be mixed

at a time. A barrel of cement contains approximately four cubic feet. If, therefore, we wish to mix one-half barrel of cement at a time, in the ratio of four to one, our gravel guage must measure eight cubic feet of gravel.



PLAN No. 2.—Barn 50 x 65. This also is a very convenient barn for 100 acres devoted to mixed farming.

The ratio of cement to gravel will depend upon the material used. If pure, clean, sharp gravel is used, with a good brand of rock cement, a concrete mixed about 4 to 1 will be found suitable for cattle stable floors. If Portland cement is used with the same gravel, it may be mixed 6 or 7 to 1, to give equally good results. It is bad, very bad, economy to attempt to make two barrels of cement do the work of three. Some dealers, in their overanxiety for trade, are willing to assure a prospective customer that their particular brand of cement may be mixed in the proportion of ten or twelve to one, and produce a floor as hard as steel, and as durable as the everlasting hills. It cannot be done. Enough cement must be used to fill up the interstices of the gravel, and make a close, compact, impervious concrete. If the floor is open enough to allow the liquid portions of the manure to percolate through it, fermentation soon destroys the bond, and the floor is ruined.

Having made a gravel guage of the desired dimensions, place it on the mortar board near one side, fill it half full of gravel, put on half the amount of cement, fill the guage with gravel, and put the balance of the cement on top. Now, lift off the guage, and, with a square-mouthed shovel, shovel the pile over twice, throwing it up into a cone shaped pile each time, so that each shovelful, as it is added, rolls down evenly on all sides of the cone. If this is carefully done, the cement and gravel will be evenly incorporated. If it is carelessly done, it will be necessary to turn the pile again to secure an even admixture, which is a prime essential to good concrete.

When the cement and gravel have been well mixed dry, spread the pile out evenly on the mortar board, about four inches thick; add water in small quantities; turn with shovel until evenly moistened, when the concrete will be ready for use. Take care to avoid getting the mortar too wet. It should be of such a consistency that it will not puddle when rammed, but will admit of being tamped down into a solid, compact mass. If the mortar has been properly tempered, ramming will bring just enough moisture to the surface to make it trowel readily to a finish.

The bottom of the gutter should be laid first. To find the depth to dig the trench, stretch the line on a level with the finished floor, and in line with the side of the gutter next to the cattle, and grade the bottom of the trench ten inches below the line and six inches wider than the finished gutter is to be, so that when the mould for the gutter is placed in position, the floor of the gutter will extend three inches on each side of the mould. Now spread an inch of sand or gravel on the bottom, and on the top of this a three-inch floor of concrete, rammed well to place, and trowelled to a smooth surface. The bottom of the gutter should be as smooth as possible, to facilitate cleaning. Now, lay on the mould for the gutter. A convenient mould is made by using a 2x6-in. plank for the side next to the stall, and a 2x4-in. for the side next to the alley; set these planks on edge, putting a ten-inch spreader between them every three or four feet. These spreaders should not be nailed, or it will be hard to get the mould out without breaking the edges off the gutter. After placing the gutter-mould in position, set a 2x4-in. scantling on edge parallel with the wall, and separated from it by small wedges, to enable you to get these scantling out again without damaging the floor. Set another scantling in the same way next to the retaining wall of the feeding alley. The upper edge of these scantlings must be levelled to the proposed surface of the floor.

We are now ready to lay the floor. First, place an inch of sand or gravel all over the stable; then fill with concrete a block about four feet wide in the alley and another in the stall immediately opposite; ram down solid with an iron rammer; screed with a straight-edge resting on the gutter mould, and on the scantling next to the wall. Pass the screed over it two or three times, with a sawing motion, until a perfectly true and even surface is obtained; cut off the edges next to the gutter, and finish with a wooden float. A steel float should not be used on stable floors; it makes too smooth a surface, on which the stock are liable to slip and injure themselves. Proceed in this way with alternate blocks on each side of the gutter until the stable is completed. The reason for concreting both sides concurrently is to avoid crowding the gutter-mould out of line by the ramming of the concrete on one side only. After the floor has hardened for a day or so, fill up the spaces left by the removal of the scantlings used in screeding, and the floor will be completed.

The same principles apply to the laying of horse-stable floors. They require, however, to be a little heavier than cattle-stable floors, and are better laid in two coats, a bottom layer three inches thick of concrete gauged about six to one, and a surface coat an inch thick of concrete gauged two to one. These two coats must be put down at the same time, and rammed well together to ensure a bond. If the bottom layer is allowed to set for an hour, before the surface layer is put on, it is very hard to make them unite, and the latter will be very apt to peel off. Plank should be bedded on top of the concrete in the stalls. Horsemen do not like to let their horses stand on the bare concrete, believing it to have a drying effect on the feet.

The important principles to be observed in all concrete work are:

1. Perfectly clean gravel.—If the gravel contains either loam or fine, soft, dead sand, it is worse than useless for concrete work. Ideal gravel consists of clean, sharp, gritty particles of various sizes, ranging from that of a marble down to a clover seed. Gravel of this description will not require screening, even for a surface coat, because in the process of ramming the coarser particles are driven down, and enough of the finer material forced to the surface to take a finish.

2. Mixing.—The cement and gravel must be thoroughly incorporated before the addition of the water.

3. Tempering.—The water must not be flushed on in large quantities, so as to wash portions of the gravel free of cement. The mortar must be moistened evenly to such a consistency as will admit of ramming to a solid mass.

4. Ramming.—The strength of the finished work can be nearly trebled by ramming.

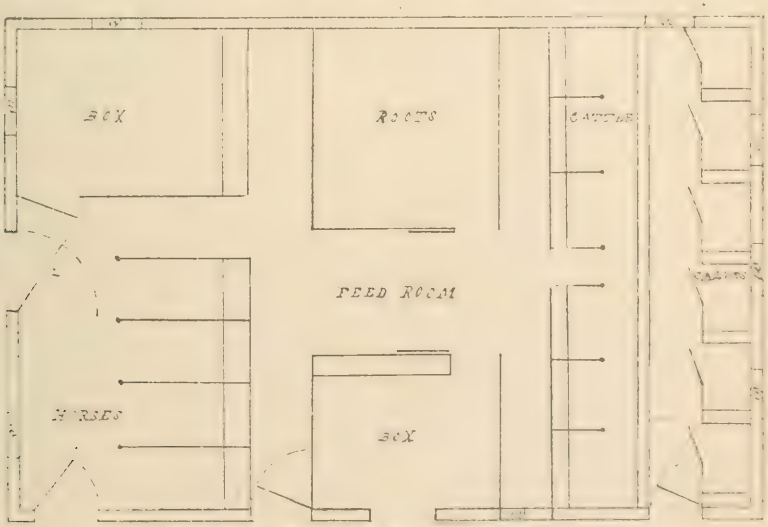
5. Ripening.—If concrete work is allowed to harden too rapidly it will be brittle and crumbly. Keep all finished work moist for at least two weeks.

Ventilation.

The requirements of a good system of ventilation are:—

1. A constant change of air in the stable.
2. The introduction and distribution of fresh air without draughts.
3. The removal of foul air without condensation and consequently dripping.
4. Economy in cost of installation.

Many systems have been devised, nearly all of them fulfilling some of these requirements, but comparatively few fulfilling all of them. Some of these devices are very simple, but only partially effective. Others are quite effective, but too cumbersome and expensive for use in farm buildings.



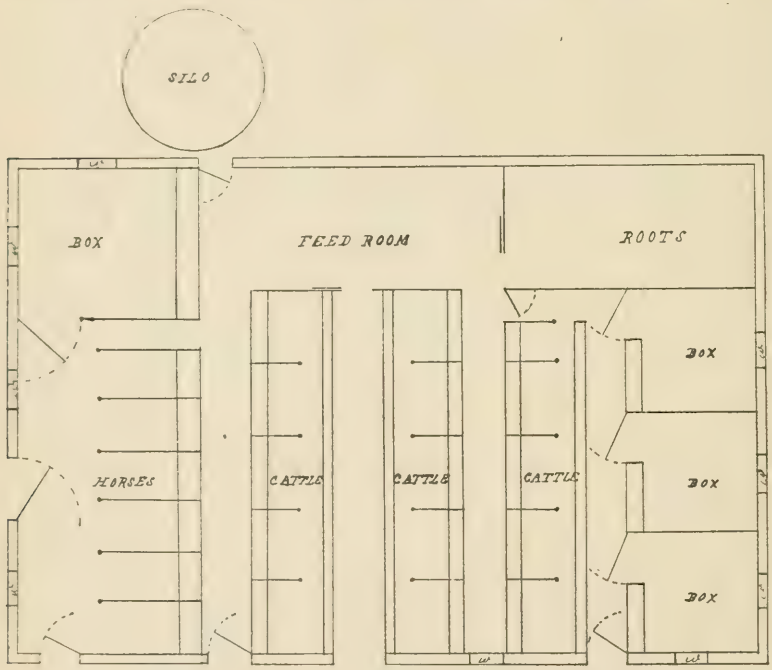
Plan No. 3.—Barn 40 x 60, adapted to a small farm.

There is a marked similarity in many respects between a stable and a furnace. The necessity for draught in a furnace is caused by the combustion of carbon, in which process oxygen is used up, and carbon dioxide and other gases given off. Heat is evolved; and consequently, the products of combus-

tion are warmer than the elements entering into it. These heated gases rise by convection until they are cooled to that temperature at which their specific gravity is the same as that of the surrounding air, when they tend to diffuse.

Similarly, in a stable, the necessity for fresh air arises from the continuous combustion of carbon in the animal body, using up oxygen and giving off carbon-dioxide and other deleterious gases. As in the furnace, so in the animal body, heat is evolved and the gases exhaled are warmer than those inhaled. They tend, therefore, to rise by convection until partially cooled, when they begin to diffuse through the stable atmosphere.

The problem, it seems to me, is the same in both cases: the prompt removal of the products of combustion, and the continuous renewal of the supply of oxygen. I contend, therefore, that the solution of the problem, in both cases, lies in the application of the same physical principles.



PLAN No. 4.—Barn 50 x 75, adapted to dairy farm of 100 acres.
One of the box-stalls in the cattle stable may be fitted up as a separator-room.

Now, to secure draught in a furnace, it is essential that the fresh air be admitted below the grate, and the gaseous products of combustion removed from above. If these conditions are reversed, the draught ceases, and the fire smothers, unless mechanical means of forcing a current are resorted to.

The system of ventilation that I am about to describe seems to be based on accurate, scientific principles; it has given excellent results, is practical, and it is comparatively inexpensive.

To provide for the fresh aid conduit (a) (See Fig. 3), the floor of the feeding alley is elevated twelve inches above the level of the stalls. The conduit may consist of a ten-inch tile, or a wooden box about twelve inches square. This will admit enough fresh air for fifteen cattle; if more are to be supplied, a conduit placed on each side of the feeding alley will be sufficient. The main conduit is tapped opposite each pair of cattle by the dis-

tributing pipe (b). These lead into the mangers, as shown, and are placed close against the parting blocks, their open ends being protected against plugging with dirt by a leather flap, or some other device. The foul air is carried off by means of ventilating shafts, leading from the ceiling of the stable out through the roof. Most farmers now run the purline post straight from the floor to the purline. Beside these posts is a very convenient place for the ventilating flues; they are out of the way, and they are not so readily chilled as when placed against the side of the barn. Excessive chilling of those foul air outlets not only reduces the convection current, but condenses moisture, causing them to drip.

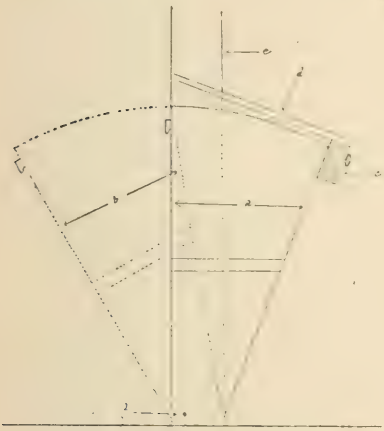


FIG. 4.—Swinging manger for horses.
(*a*) Manger in position.
(*b*) Manger swung out into alley to receive food.
(*c*) Stationary scantling to which the horses are tied.
(*d*) Bars placed 12 inches apart to prevent horses from throwing out the hay.
(*e*) Post.
(*f*) Bolt on which the manger is hinged.

It will be seen by this method, the fresh air is admitted, as in the furnace below the heating area; it is distributed evenly and without drafts; it is liberated at the heads of the cattle, giving them a chance to use it before it has been diluted by the poisonous gases of the stable; as it is heated by inhalation and by the heat radiated from the bodies of the animals, convection currents are set up towards the ceiling, and out through the foul air shafts. The system is automatic in its action; the more stock in the stable, the stronger the convection current, and the more fresh air introduced.

PUTTING IN THE STABLING.

To lay out a stable in such a way as to effect the greatest economy of space and convenience for feeding is an art for which no hard and fast rules can be laid down. One must "cut his coat according to the cloth," so to speak. There are, however, a few general principles which we should be careful to observe, in so far as the conditions will admit.

The feed room and root cellar should be centrally located, for convenience in feeding, and also in filling the root cellar, which is most easily accomplished when the latter is directly under the barn floor.

The horse stable should be so located as to admit of two entrances; one opening into the barnyard, for cleaning out the manure, the other so placed that the horses may be taken in and out without going through the barnyard.

Apartments for loose cattle should be long and narrow rather than square, to admit of plenty of manger room. They should be located so that a team may be driven through for cleaning out.

The alleys behind the stock should be of good width; not less than eight feet behind the horses, and not less than five feet behind the cattle. It is better, if necessary, to narrow up the feeding alley, than to have a very narrow alley behind the stock. The floor of the alley behind the stock should be two inches lower than the stalls. The animals look much better if standing a little higher.

The mangers for tied cattle should be put on the floor level, as shown in Fig. 3. If elevated eight or ten inches, as was formerly the custom, the

cattle, when lying, are forced back into the gutter; but when put in on the level, they lie with their heads over the mangers, and not only greater comfort but also greater cleanliness is secured. The mangers for loose cattle should be raised at least twelve inches, especially if the manure is to be allowed to accumulate.

The bottoms of all mangers, except for horses, should be of cement concrete, trowelled to a smooth finish. It is cleaner and lasts longer than wood, which rots out surprisingly fast in a manger. The whole manger may be made of cement if desired; but I prefer that shown in Fig. 3; of which the bottom and back are of concrete. The face plank may be moved backwards or forwards if necessary to adapt the length of the stall to the animal tied. If it is necessary to tie cattle of various ages in one row, the gutter may be put in on an angle as shown in Plan 2. This looks better, and is more convenient for cleaning, than to make part of the stalls of one length and the rest of another, with a sharp turn in the gutter.

The best horse-manger I have seen is illustrated in Fig. 4. When pulled out into the alley, the food may be put in and any necessary mixing done without molestation from the horse; or if, for any reason, it is necessary for the man to be absent for a part of the day, the mangers may be left swung into the alley with the necessary food in them, and at feeding time a child can push them through to the horses.

No stable is complete without some provision for watering the cattle inside. Many more or less ingenious and complicated devices have been patented; but I believe that there is nothing better than a continuous wooden trough, lined with galvanized iron. It is more easily kept clean and is less liable to get broken, choked up, or otherwise out of order. This may be made to serve a double purpose by placing in the position of the scantling (d) shown in Fig. 3.

All inside partitions and stalls should be kept as low as possible, to prevent all unnecessary obstruction to the light and view. A man standing almost any place in the stable should be able to see every animal in it. The stalls between milking animals should be no longer than is necessary to prevent the moltestation of one animal by the other, in order that they may be out of the way of the attendants while milking. Stall-posts should be grooved to receive the planks. This, although slightly more trouble, is very much to be preferred to cleating.

An excellent device for feeding loose cattle consists of a row of old-fashioned, stationary stanchions, the movable bars of which are connected, by a rod, with a lever at one end of the building. When the cattle are fed, each animal thrusts his head through an open stanchion to reach the manger; all the stanchions are then closed at once by means of the lever. In this way the cattle are prevented from crowding one another away from the mangers until through eating, when they may be quickly and easily released. This I believe to be the ideal method of handling all classes of cattle except milking cows.

It is well to provide one or two box-stalls for breeding animals, and for colts. At least one in connection with the horse stable should be not less than fifteen feet square; a small stall is a very dangerous place to keep a mare and foal.

For calves, the most convenient device is a row of boxes behind the cows, as shown in Fig. 1. These should have little mangers, so arranged that the calves cannot upset and spill the milk when placed in them.

I would make no provision for housing sheep, hogs or poultry in the main barn. It is too warm and also too expensive for sheep; hogs create an unde-

sirable odor; and poultry are apt to infest the stock with vermin. Of the three, I prefer to accommodate the hogs; for, with good ventilation, the odor may be largely overcome.

I append a number of plans for stabling, adapted to various conditions. These plans are not submitted as models of perfection, from which we may not deviate; they are added to illustrate some of the principles that I have attempted to outline in this essay, with the hope that they will be helpful to the prospective builder as suggestive outlines, which he may modify to suit his own peculiar conditions and tastes.

It will be noticed that in no case does the width of the barn exceed fifty feet. A wider barn could often be laid out more conveniently below, but it is too wide for convenience in storing hay and grain above. When stuff is hoisted with the hay-fork or slings it is as far as a man can pitch nicely to throw it to each end without handling it twice. Again, at threshing time, a very wide barn is inconvenient for getting stuff to the machine, and also for getting straw away from it. I find that nearly all of those that have built barns wider than fifty feet regret it.

It will also be noticed that I have made no provision for an "overshot." The basement should be the full size of the barn above. I regard an overshot as a wasteful devise for building the stable outdoors. It entails a waste of valuable space, it darkens the stall very considerably, it is apt to be draughty, and, as an off-set to all this, it has few, if any, redeeming features.

THE IMPURITIES OF WHEAT, FLOUR, AND YEAST, AND THE DISEASES OF BREAD.

By F. C. Harrison, Professor of Bacteriology, O.A.C., Guelph.

The *Bacteria* are the smallest living plants, microscopic, and so small 25,000 placed end to end would be only one inch long. Although so small, they are able to bring about profound changes, due to their power of growing quickly in certain liquids and changing complex substances into simpler ones.

The changes which are known as decay, putrefaction, fermentation, etc., are brought about by the agency of these miscroscopic forms of life, and were it not for the ceaseless labours of these tiny plants in tearing down and restoring to earth and air the elements of organic life, we would soon be choked in the debris of the universe; for you can easily imagine the condition of affairs that would intervene were all the factors of decomposition eliminated, and so you can see that bacteria are very necessary factors in life.

The bacteria are very simple in form. We distinguish three main types, which may be compared to a ball, a rod or a corkscrew; scientifically, we term these shapes coccus, bacillus and spirillum, respectively. (See Fig. 1). No matter what shape they are, they all increase or multiply by transverse division, that is to say the membrane between two cells is always formed in such a way that a minimum of material is required. Under favorable circumstances this division into two can take place in 20 to 30 minutes, and assuming that this rate of reproduction be kept up the number of descendants of a single bacillus in 24 hours would be over 16½ millions.

Some bacteria have also a latent or resting stage, and when in this shape are called *spores*. (See Figs. 2 and 3). Many spores are able to live for a considerable length of time in boiling water. The spores of certain vari-

eties of the Potato bacillus have been known to resist the boiling temperature for six hours, and it is evident that if spores of this character got into the dough they would be able to withstand the heat of baking, which in the interior of the loaf is seldom more than 212 degrees F.

In order that you may understand the action of these low plant-like organisms upon flour or dough, it is necessary to say a word of explanation as to the conditions which are essential for their growth. We know that we must have air to breath, food to eat, clothing to keep us warm, etc., and so in the same way the bacteria, yeasts, moulds, and other low forms of life must have: —

1. *Proper food supply.* The essential elements that must be present are nitrogen, carbon, and oxygen, with a trace of mineral elements.

2. *Moisture.* Unless enough water is present, bacteria will not develop, and advantage is taken of this fact in the preservation of foods, such as extract of meat, hay, flours, etc.

3. *Temperature.* A certain degree of heat is necessary for growth, and the best temperature for development differs for each species. Generally speaking, a temperature of 80 to 95 degrees F. is most favorable for growth. Too high or too low a temperature prevents development.

4. *Gaseous Environment.* Most bacteria require atmospheric air for their development, but others will only grow when the oxygen of the air is absent, such forms are called anecrobic, but the air-loving classes are the most important to the baker.

The above are briefly the requirements for growth and in speaking subsequently of the effects of bacteria and yeast on flour and dough we shall see the effect of these requirements upon the baker's product. Bacteria are found everywhere, they are present in the earth, water and air—on the exterior of wheat, especially between the hairs of the grain they are numerous. Heat resistant forms which are found on ears of corn, have given considerable trouble to canning factories, as the heat of cooking did not destroy the spores of these bacteria, and consequently they were able to grow in the can, giving rise to sour and fermented corn and causing considerable loss to the canners.

Little is known of the economic importance of the bacteria that are present on the wheat grain; occasionally they are the cause of the flour spoiling, but the low water content of flour usually prevents their increase. Whether they play any part in the process of ripening or heating of wheat or flour is not yet known, but these phenomena are probably complicated occurrences in which the bacteria are only of the many factors involved. It is certain however, that considerable numbers of bacteria are present in certain flours, and whilst a number of species are quite harmless, there are some which produce sourness or acidity in the dough, giving rise to sour bread. Bryant has shown that flours contained acid-producing bacteria, and that low grade, poor flours contained more of these bacteria than better grade flours. He claimed that the acetic or vinegar bacteria were the principal agents to produce sourness, but this is evidently an error, as subsequent researches have failed to corroborate his results; in fact, we may say that the principal acid bacteria present in flours are those of the lactic acid group. Prescott has shown that bacteria, indistinguishable from the Colon bacillus—a markedly acid form—are present in flour and the writer in a number of recent determinations of the kinds of bacteria in various brands of flour, has met with numerous representatives of the lactic acid group of organisms. A few figures illustrative of

the number of bacteria in various grades of flour may be of interest to you, as they show that the raw material of the baker may contain organisms injurious to good baking.

Number and kind of bacteria found in various brands of flour:

	Acid bacteria per gr.	Moulds.	Negative bacteria.
Manitoba Hard	0	85	7
Turkey Red	2	17	3
Dawson's Golden Chaff	8	115	22
Winter Wheat No. 1	75	370	80
Winter Wheat No. 2	65	2,100	17

These figures show the superiority of flour made from hard wheat over the soft wheats, and explain the reason why sourness is more apt to occur in low grade flours.

FIG. 1.—Types of bacteria. *A*. Cocci of various sizes. *B*. Bacilli of various sizes. Magnif. 800.

FIG. 2.—Spores. The clear space in the black rod is the spore.

FIG. 3.—Spores. The spores are egg shaped and black, the rods are lighter in color.

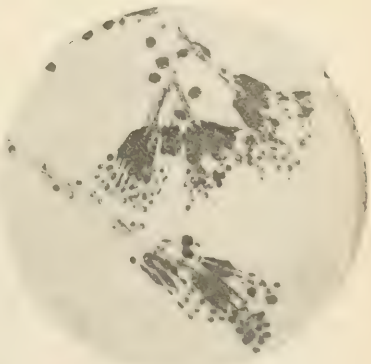


FIG. 4.—A common mould (*Penicillium glaucum*). Magnification, 500 diameters.

FUNGI.

Any food that is slightly damp, which is left exposed to the air becomes clothed in a short time with a white, green, blue or black covering. When this appears on bread we speak of it as "mouldy," in flour "musty." If we took a small particle of this spoiled flour and examined it under a microscope we should find that it was made up of numbers of colorless threads which

make up the structure, or vegetation of the mould. These threads are the roots of the fungus and they grow like roots and support the fruits of the mould, which are formed on the upper surface and which we call the spores. There are many varieties of these moulds. The commonest is the green mould, which may be easily recognized by its green color. (See Fig. 4.) This fungus is nearly always present in flour, and may be usually easily isolated from dough, and is common in flours that have become damp from bad storage. The spores of this species are stated by some to be able to withstand the heat of boiling water, so that baking a mouldy or musty flour would not necessarily destroy the spores. The next commonest mould is very similar to the green mould in color, but the arrangement of the spores is quite different—the spores are borne upon a clublike structure from which chains and rows of spores extend outward. According to Percy Smith this mould when alone present in flour gives a mouldy taste, but when another mould (Mucor Mucedo) is present the taste or odor is "musty."

Certain species of aspergillus are of great economic importance; thus the Japanese utilize the growing of certain species as a diastatic ferment like malt, and in Europe many vinegar factories convert the starch of their materials into sugar by using a variety of this mould. On the other hand, there are species met with in nature which produce a pneumonic or pseudo tuberculous disease. Natural affections of this kind are frequently observed among birds, and occasionally they are met with in horses and cattle and at times in man. Some species are fairly common in some flours.

There are numerous other moulds met with in flour and wheat, but they have not the economic importance of the species briefly described.

Two species of fungi, the spores of which may be frequently seen in flour, are the so-called Smut and Bunt fungi. Smut is caused by a fungus which develops in the grain, living at the expense of the starch of the grain and replacing it by a blackish powder, made up of innumerable spores. This disease attacks wheat less frequently than oats and barley.

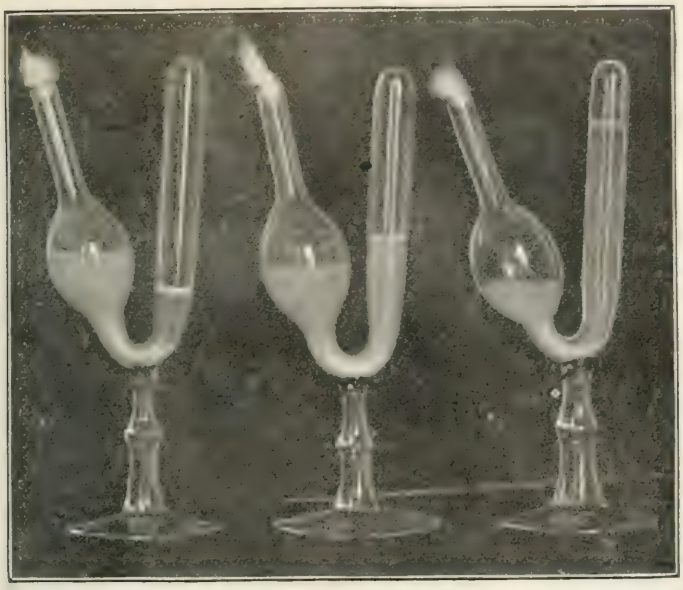
The disease known as "Bunt" does not manifest itself until after the grain is threshed. "Bunted" grains are plumper than those that are sound, and if such grains are open they will be found to be filled with a black, greasy powder with a disagreeable odor, hence the name "stinking smut."

Ergot is usually found on rye, and like smut it develops within the grain, filling it with a mass of spores and mycelium. Ergoty grains are usually larger than non-infected grains, violet black in color, and have a peculiar odor. The disease ergotism, due to ingestion of this fungus, has within recent years prevailed in epidemic form in Russia and Spain. Isolated instances of it are known in North America, but more usually the symptoms are seen in animals.

The seeds of certain species of vetch called Lathyrus give rise to poisoning, producing a form of spinal paralysis. The disease was formerly much more prevalent than it is at the present. As early as 1671 it was known that bread in which vetch seeds were present seriously affected those who ate it and the Grand Duke of Wurtenberg issued an edict forbidding the use of food of this kind.

The Impurities of Yeast.

The most important function of yeast is to form gas and thus raise the dough, and some yeasts form very much more gas in a given time than others, hence it is necessary to carefully ascertain the fermentative powers of yeast. (See Fig. 5). Most yeast dealers usually have varieties of yeast of sufficient



1 2 3

FIG. 5.—Fermentation tubes containing flour and water—
1. With addition of a distillery yeast.
2. " " brewery yeast.
3. " " dried cake yeast.

Note, in the right arms of the tubes, that there is more gas in 1 than in the others, shewing the more energetic working of the distillery yeast. For the same reason there is more gas in 2 than in 3.

FIG. 6.—A wine yeast shewing spore formation: magnif. 1,000 diameters. From 2 to 4 spores may be seen in most of the cells.

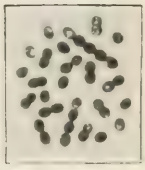


FIG. 7.—The lactic acid bacillus Mag. 2,200 diameters.

strength, but those bakers who rely upon breweries for their yeast supply should select a yeast which has not run out or lost strength. Yeasts from distilleries give better results than those used in the manufacture of ale or lager beer. (See Fig. 6). The next most important property of yeast is that it be pure, that is, free from moulds and bacteria and adulterating substances. The most careful management and attention to detail is necessary in order to prepare yeast free from injurious organisms; and we constantly find many brands of compressed yeast which are contaminated to a greater or less extent. Yeast is a perishable commodity, and the fact that yeast cakes quickly deteriorate even when unopened, is a proof that bacteria and mould are present in the package as well as yeasts. As soon as the yeast cells begin to die the bacteria present feed on the dead yeast cells and decay and putrefaction set in; and while it is often possible to have a yeast contaminated and still obtain good bread, yet it is almost certain that if the yeast cells become weakened from any cause, the bacteria will increase with such rapidity that bad bread will be the result. But when the yeast is strong and vigorous, it holds many bacteria in check and prevents the injury which would be caused by their growth.

The commonest impurities of brewery yeasts and compressed yeasts are moulds and bacteria. If yeast is kept for any length of time it quickly putrefies, which means that the yeast cells are being eaten and decomposed by the bacteria and moulds present. The bacteria present are of many different kinds—acid producers, putrefactive germs, and occasionally the bacillus which produces "sticky" or ropy bread, all of them injurious from a baker's standpoint, as they produce faults or diseases in bread. The moulds present may belong to any of the species I have mentioned, and they also must be classed as injurious.

The chief defect of the dried yeast cake is the comparatively small number of vigorous yeast cells present. Being dry, the cakes cannot decay, for as I have already pointed out, bacteria are unable to grow where moisture is absent. We have examined dry cakes in which we have been unable to find a single living yeast cell. These cakes also contained a large amount of starch, grains or hops, or a mixture of these; in fact the greater bulk of the cake is made up of such substances, and whilst certain amounts of these are indispensable and necessary for the manufacture of dry yeast cake, yet in some cases that have come to our notice too much of these materials were used.

Impurities of Yeast Food.

Some bakers still prepare their own yeast; and a word or two on the preparation of such foods and the precautions to be observed may not be out of place, even in these days of compressed yeast. Well managed bakeries preparing their own yeast certainly turn out bread which has a nutty flavor and aroma that is much appreciated by many. No baker should attempt the cultivation of yeasts for his own use unless he is acquainted with the requirements of the yeast plant and understands the necessity of strict cleanliness. The chief points to remember in making a yeast brew are:

1. To start with a pure and vigorous yeast.

2. To maintain a suitable and even temperature at all times.

3. To practice the greatest cleanliness in order to avoid the contamination of yeast by bacteria.

Potatoes, flour, malt, sugar and rice may all be used for yeast food, and all will give good results under careful management. Potatoes are most

generally used, and as a rule give very satisfactory results. The disadvantage in connection with potatoes is that they have been in contact with the earth and possess so many cracks and eyes that they are difficult to free from the bacteria always present in large numbers in the earth. It is a common practice to mash the potatoes up with the skins. This is a mistake, and may cause trouble, as the boiling will not kill many of the bacterial spores which are upon the skin, and if the skin containing them is mixed up with the fer-

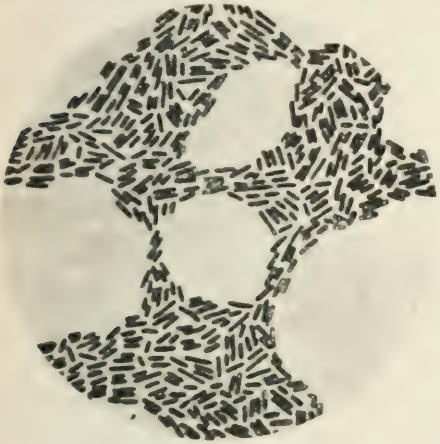


FIG. 8.—A butyric acid bacillus.
The smell of butyric acid is similar to that of rancid butter.

FIG. 9.—An acetic acid bacillus.
Produces acidity in flour and vinegar in alcoholic liquors.

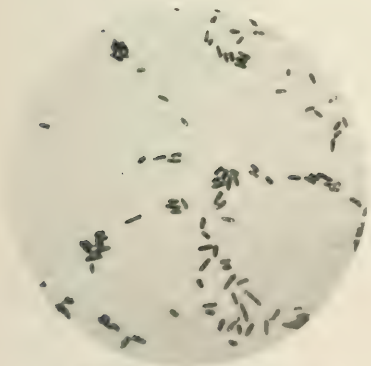


FIG. 10.—The potato bacillus.
Produces ropy or sticky bread.

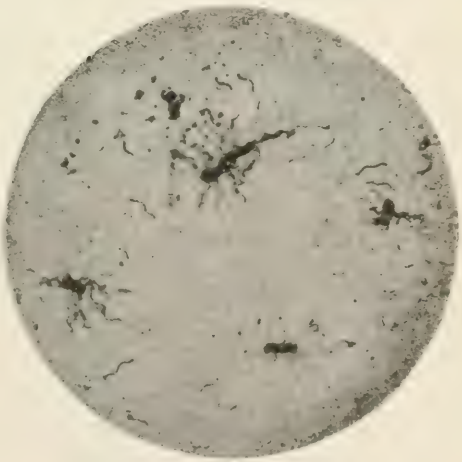


FIG. 11.—The potato bacillus.
Stained to show the organs of locomotion.

ment, the spore will commence to grow and may give bad results. Slimy or viscous bread is produced by a germ which is commonly known as the potato bacillus because it is almost invariably present upon the surface of potatoes.

If at all possible, always use hops in the yeast, as the hop flour contains an antiseptic, that is, there is a substance present in the hops which will prevent bacteria from growing in it; but while it hinders the growth of the bacteria, it does not affect the yeast in the same manner; in other words, the hops have a selective action. Hop extracts have a great antiseptic power against the potato bacillus.

The important point in making a good yeast food is to boil it before adding the yeast in order to make it as sterile as possible. When it is cooled to 75 or 80 degrees add the yeast. The yeast tub or crock should be kept scrupulously clean and be supplied with a lid. A stirrer should be kept in the vessel and it should be kept for the purpose of stirring only. The stirring should never be done with the hands, as is frequently the case.

Impurities from the Air, Water, Milk or Dirty Utensils.

There are many bacteria and moulds in air and water; and although contamination from air may be of little importance in bakeries, yet close, dark, stuffy or underground bakeries are injurious to the health of the workmen, and such rooms are more likely to be dirty than well-lighted and well-ventilated workshops. Good water is now usually supplied in all cities and towns, but in villages supplied with well water there is more apt to be contamination. We know that in the dairy business many epidemics have been caused by contaminated well water, but naturally there is less danger in the bakeries.

In milk we find a large number of acid organisms, and milk bread is more apt to go sour and spoil quicker than bread made with water, possibly on account of the large number of lactic acid bacteria that are usually present in milk.

Dirty utensils, either tubs or troughs, harbor injurious bacteria, which supplied with food remaining in the cracks and crevices, reproduce themselves with astonishing rapidity, and when fresh dough or other food materials are placed in the tub or trough, these undesirable bacteria are mixed and distributed through the mass and thus produce harmful effects. Absolute cleanliness in every detail should be the rule.

The Diseases of Bread.

The commonest disease or abnormal fermentation of bread is known as Sour Bread, which means that the odor and flavor of the bread are sour to the senses of smell and taste. This sourness is fairly common; statistics which I have gathered from various sources, principally from small towns with populations ranging from 7,000 to 25,000, show that the amount of sour bread is about 26 per cent—a rather high figure; but from the number of references in the literature on baking, we must admit that the trouble is a common one, and until recently a controversial one, for it was left to a bacteriological examination to discover the real cause of souring.

Sour bread is caused by lactic acid bacteria (Fig. 7), associated with butyric acid (Fig. 8), and acetic acid-producing bacteria (Fig. 9), in comparatively small numbers, and these germs, as already mentioned, are commonly found in poor flours, where they remain in a dormant condition until provided with the essentials necessary for their growth—namely, moisture, a certain temperature and a suitable supply of food. The food supply naturally surrounds them: and when water is added to the flour and the temperature is raised to between 70 and 90 degrees F., they reproduce their presence by the products they form. Dough with considerable moisture in it, or, as you term it, "slack," gives the bacteria a better environment, and consequently sourness is more apt to increase rapidly in such dough. Temperature also plays an important part, the best temperature for the growth of most of the acid-producing germs being about 97 degrees. Hence if these high temperatures exist, bacterial activity will be greatly increased.

Acid germs are also present in many samples of yeast. We analyzed a large number of samples of yeast used for breadmaking, and many of them contained injurious bacteria in large numbers: in fact some of them

had more bacteria than yeasts, a state of affairs which is very serious, as in such cases the alcoholic fermentation will be weak and thus give the bacteria a good opportunity to grow; for in dough we find that there is always a struggle for existence going on, with the survival of the fittest.

If, again, the normal alcoholic fermentation is at the first vigorous and then begins to subside, it gives the bacteria an opportunity to grow. Hence "overproved" dough is especially liable to become sour.

Sticky, Slimy or Viscous Bread.

This affection is not nearly so common as the preceding; yet the number of cases recorded is quite large, and this abnormal fermentation is quite frequently met with in country districts. As the name implies, the bread, usually the crumb near the center of the loaf, is slimy or sticky, forming short threads if the finger is pressed against the cut surface of the bread and withdrawn. The stringiness increases with age, a proof of the living nature of the trouble. Cases of sticky bread usually occur in the warm summer months, the high temperature favoring the growth of the bacteria which produce the trouble.

From this sticky bread it is comparatively easy to isolate an organism which when placed in sterilized (or germ-proof) bread produces the stickiness met with under natural conditions, thus proving the relation of bacteria to the trouble.

The specific germ causing stickiness is a very common inhabitant of the soil, and is usually present upon the skins and "eyes" of potatoes; and where these tubers are used in making a brew or ferment, there is danger of introducing the slimy germ, if the potatoes and mash are not properly sterilized.

The slimy germ, which is known as the "potato bacillus" (See Fig. 10, 11), on account of the frequency with which it is met with on potatoes, is also found in yeast cakes. We have found this germ in both dried and compressed yeast cake; and, given favorable conditions for rapid growth, it might produce epidemics of slimy bread at any time. This particular bacillus produces spores which are very resistant to heat and able to withstand the baking temperature quite readily. In fact, at no time is the heat or baking high enough to kill the spores of this bacillus. This germ is occasionally found in milk. This affection may be controlled by absolute cleanliness in the yeast tubs and kneading troughs, and the proper sterilization of the brew or ferment by the use of a certain quantity of hops; for, in a number of experiments we have made with hop extracts, we have found that even a small quantity of good hops (½ oz. to the gallon) has great antiseptic power, and hinders the development of the "potato bacillus" without injuring the activity of the yeast. The bread should be kept in a cool place after baking, for the stickiness is most prevalent in hot weather, and a cool temperature retards the growth of the bacillus.

Musty or Mouldy Bread.

Musty or mouldy bread is met with, as a rule, only when the bread has been cut and allowed to stand several days. Occasionally, however, we find bread only one day old affected with mustiness. This affection has been the subject of several investigations, the results of which agree in main points. The causes of the trouble are various species of moulds, which produce a musty odor on bread without decomposing it; but the chemical composition of the

bread is changed by the growth of the moulds, and the change favors the subsequent growth of any bacteria that may be present. Flours which have become damp, or even very low grade flours, may contain these moulds in large quantity; and although the organisms are killed by the baking process, yet the musty flavor persists and is present in the baked loaf.

Bloody Bread.

Bloody bread, or red bread, is not an affection which troubles bakers; but sometimes makes its appearance in the household. The microbe which produces this affection is of great historical interest, for we read in the pages of Livy, the Roman historian, that the bread of the Roman army turned red, and in consequence 170 "malevolent women" were put to death, because they were thought to have caused the trouble. This same thing happened during the siege of Troy by Alexander the Great, and many a victim of the proceedings taken against witchcraft in bygone centuries was consigned to the stake on the charge of having produced the blood-red spots that were occasionally found on the Host (consecrated bread or wafer), and which filled the credulous minds of the masses with horror. Even in 1819 the entire province of Padua, Italy, was set in commotion by the frequent appearance of such spots and drops on various articles of food; and I have also heard reports of its presence in Ontario. I had sent me from the vicinity of Cobourg, Ontario, a sample of bread with the characteristic red blotches upon it. Knives brought into contact with the red mass and used again without being cleaned, naturally carried the infection to fresh food, and the pantry quickly became seeded with this organism, much to the consternation of the household, who were at a loss to account for the trouble. By careful disinfection, the germs were destroyed, as they were easily killed, and no further trouble ensued.

As a rule, this germ is found in dirt and soil. Klein, who investigated an infection of food stuffs caused by this germ, furnishes the following explanation as to the cause of the outbreak which he investigated: "The back of the premises, including the pantry, faces southwest, it looks over a churchyard, that has not been used for generations; but a few days previous to the outbreak, great disturbances by workmen had been going on in that churchyard, and as about the very time of these disturbances strong southwesterly winds were blowing, it is in the highest degree probable that the microbe disturbed during the alterations from the quiet nook and corner in which it had previously settled, was blown by the wind into the premises lying close by and in the direction of the wind; and it is more than likely that this germ had been 'lying low' in some spot on or near the surface of the area of the churchyard."

A study of these "outbreaks" teaches us the importance of putting away or storing food which, on being cut or otherwise prepared, is in a suitable condition for infecton with organisms. It is also important to protect food from flies, for many diseases are carried by these insects.

SNOW ROADS.

By Major James Sheppard, Queenston.

The severe winter just passed has brought to the front the question of what can be done to keep the roads open and passable in winter. When we have to depend upon the stage coach for carrying the mails, and com-

mercial travellers desert the railways and take to driving, we begin to see the importance of keeping the roads in a condition that allows the traffic of the country to go on even if in a modified way.

Occasionally we meet a man who argues that wire fences make the roads worse, but this is prejudice, except when some local conditions exist which go to produce results opposite to the general conditions that prevail over the country. The ordinary farmer only sees a very short stretch of road, and he forms his opinion from the state of the road he travels, and if from some local cause a wire fence does not prevent the road from filling up, or in some cases even makes it worse, he comes to the conclusion that wire fences are a failure as a factor in preventing snow blockades.

But travellers who drive miles in different sections, and who see and use the roads under all circumstances, are unanimously in favor of wire fences; and while these fences are a great advantage, there are still some things that individual municipalities can do and ought to do to improve winter roads.

The objection urged against wire fences is that the road gets high in the centre and often makes turning out impossible. To prevent this, efforts should be made to keep the road level. Don't use a plow to throw up a ridge on each side to catch the snow, but use a disk or roller or better both.

I consider a disk harrow the best implement available at the present time for improving snow roads, and if followed by a light roller the surface is kept level and the snow is not held in the centre.

Another thing that would materially help would be the widening of sleighs. The ordinary sleigh is too narrow, and the tracks made too close together to permit of the use of large horses.

Let every council encourage the building of wire fences by bonus or otherwise, and let their path-masters get out after every storm with a disk, and see that passing places are provided at short intervals and kept open. The result would be to keep the road down, and the trouble arising from blockaded roads much lessened, and in many cases entirely overcome.

An improved sleigh runner is coming into general use in the United States. The runner is constructed of a material from four to six inches wide, being shod with a thin iron shoe over the whole surface, the heavy cast shoe being placed in the centre.

The advantage claimed being that in deep snow the broad surface will not cut in as deeply while you still have the narrow shoe for hard roads.

AGRICULTURE AS A SCIENCE AND AN ART.

By J. T. Metcalfe, Burford.

My subject being a broad one, I shall have to confine my statements to generalities, and trust that my readers may be able to apply the information given to their special lines.

It is not enough for a farmer in this progressive age to be able to do the work as his father and grandfather did. He must study out new methods for himself as called for by his own special needs. To do this he should have a thorough education both in our common, and if possible our High Schools, and also in our Agricultural College.

In order to know this subject aright, it is necessary to know the meaning of the words "Science" and "Art." I am much afraid that the majority may think that I intend writing about some kind of fancy farming. Now,

if you have any such impression as this, it is entirely erroneous, for I intend to write about plain, everyday, practical farming as you will more readily see when I explain the meaning of the two words.

Science has been aptly described as "Knowledge reduced to system," and Art as "The application of that knowledge." First we must get the knowledge, in this case a good agricultural education; then we must reduce it to a system, and this is the "Science" of Agriculture.

Education is not enough. We may be qualified for a professorship by our scholastic attainments, and yet if we cannot make use of it in our calling we had better not have it. In these days of keen competition we must get at the root of things, and this education enables us to do, and then build very carefully on this sure foundation if we wish to succeed. In the matter of system we are very much behind our city cousins. Still they go to somewhat of an extreme in some respects, if we can believe everything that we hear. It must be admitted, however, that their system of regular hours has its advantages, although hard to apply on the farm. Part of the time we are rushed almost to death, and part of the time we are not very busy, so that it is a very hard matter indeed to stick to regular hours. Moreover, in the large manufacturing establishments a great deal of attention is paid to making the very best use of all the by-products. Some of the largest of these keep an efficient chemist on their staff, at a large salary, while those who cannot afford this employ one as often as possible and it pays them. I repeat it—it pays them. Of course the men who are at the head of these concerns are not in the business for their health, and yet I am told on good authority that they calculate to simply pay expenses with their finished goods. "From whence then comes their enormous profits?" you ask. My answer is:—"From the by-products." They have made such good and thorough use of these bye-products, which at one time were thrown away, that they can sell their goods much cheaper than formerly and still make larger profit.

Now this is the problem that the farmers of this country have got to solve. We hear a lot of talk about the good old times when wheat was one dollar a bushel, and yet our progressive farmers make more money than these fortunate predecessors and make it easier. Why? They use their brains in connection with their muscles, a good combination surely. There is only one way to bring about this state of things, and that is by allowing as little as possible to go to waste and by making the best possible use of the by-products. A person who has not tried this will be surprised at the amount of attention involved; but it will pay, and you know that, whether we express it or not, we are all after the almighty dollar. There is no harm in this that I can see, provided we get it legitimately and are not too stingy about the spending of it, for you all know that it is quite an essential to comfortable living.

I was at one time of the opinion that in order to do his best work, the farmer must specialize as do his city cousins; but I have got over that illusion, and am now of the firm opinion that the farmer, of all men, must be an all-round man. So much depends on the weather that we cannot afford to take chances on one particular crop, but must have several irons in the fire in order to provide constant employment and to lessen the risk. If he has several sources from which to draw his income the probability is that they will not all fail at once, and thus leave him stranded as he would probably be if he were a specialist. Still he should study each of his crops as thoroughly and effectively as possible with the time and means at his command.

In dealing with agriculture as an art, or the application of the science, we come to where we are put to the test, because it is by the results that our work is judged in this world. Here we have an opportunity to show that we have put our knowledge of the Science of Agriculture to good advantage. In fact we might say that we have put the ore into the smelter to separate the gold from the dross, for you know that many fine spun theories do not work when put to the test. Thus it is that we find out how much of our knowledge is really profitable to us and how much is not.

You have all heard the old saying that "Experience is the best teacher," and it is quite true. It is also quite an expensive teacher unless we are extremely careful. The best plan then would be for us to take note of the experience of others as well as of our own, and be willing to profit by their success or failure. We must not, however, carry this to the extreme of being mere copyists, just doing certain things in a certain way, but we must make use of our own judgment in almost every particular if we wish to succeed. Sound judgment goes a long way toward success, and it is obtained largely by practice; namely, relying on our judgment aided by experience. In fact, the two are so closely related that it is extremely difficult to say where experience ends and where judgment begins.

Perhaps it might be said that the key-note of success in this line, as in all others, would be a willingness to perform hard and ofttimes disagreeable tasks to the best of our ability. I would, however, limit this to a certain extent and would say that the key-note of success lies in a willingness to perform all tasks to the best of our ability after we have first studied them over thoroughly and thought them out carefully. Now by this I do not mean that we should waste time between jobs, thinking what we are to do next; but we must plan ahead of time, and while we are doing one thing we must also have our minds on the next.

Another essential to success is what is called "Stick-to-it-iveness." By this I do not mean that we should be obstinate, for that is exactly what we should not be. We should first carefully consider what we are going to do, and then after we have fully made up our minds we should not allow any small matter to hinder us, but should put forth all the greater effort to overcome difficulties.

One thing above all others that we must remember is that we must "make our heads save our heels," as the old saying puts it. We will find plenty of work to do without making it any harder than necessary; and a mixture of brain and brawn, about half and half, has been found to make an excellent managing power on the farm.

I cannot close without saying a word or two especially to the young men, who, perhaps, are not yet decided as to what their calling is in the world. I want to tell you that there is no grander or nobler calling on the face of the earth than agriculture, and we should not be too slow to appreciate our privileges. We are too apt to be led away by the glitter of city life, and the big money that we hear is to be made there. However, a man working in the shops does not become developed as he should. He learns to do but one thing, and must stick to it day after day and year after year. I am just mentioning "Shops," because this is where the average boy from the farm is tempted to go. To be sure big wages are paid, but, setting aside the fact that the cost of living in the city is so high that it is hard to save anything, we have to face the fact that only young men are wanted. I was having a discussion with a union man not long ago, and

I tried to go for the unions hard. "You men," I said, "are always striking for better wages, no matter how big pay you are already getting." His reply, however, somewhat startled me, for he said, "We have to, because when we get to be forty-five we are old and must lay off, so we must make big wages when we are young in order to support our families." I began to have more patience with unions.

Do you not think with me, in view of this, that it would be preferable to live on a farm until we are able to retire at a good age and enjoy ourselves, rather than to slave away in a shop until we have worn ourselves out? I think that if all young men saw the matter in this light that we would soon have the problem solved of "How to keep the boy on the farm."

THE NEW SCHOOL PROGRAMME.

By John Seath, LL.D., Inspector of High Schools for Ontario.

The new school programmes of study differ widely in many respects from those which have preceded them. In one important respect the changes are of interest to the farmer, for it is now in his power to secure due recognition of his special claims upon our educational system. He thinks the schools have been dominated by the examinations: the public schools by the high school entrance examinations, and the high schools by the teachers and the university examinations, and in neither has agriculture—although on the programme—received practically any attention. If this state of affairs continues, the farmer will have himself to blame, for the Education Department has both reduced the examination pressure to a minimum and provided courses in agriculture for the public and the high schools. It has also taken steps to provide adequately trained teachers. In the Normal and the Model schools the elements of agriculture will receive attention, and in the Macdonald Institute at Guelph, the future high school and continuation class teacher may be prepared for the special courses in the subject as soon as the demand arises for his services.

By offering a special grant for school gardens, the Education Department, a year or so ago, took the first important step in the direction of the changes which the new programmes are intended to bring about. What these changes are, may be seen from the appended school courses, which are quoted in full from the Regulations.

In Forms 1-4 of the Public Schools, Agriculture is taken up where it is best taken up, as part of the Nature Study, and an attempt has been made to increase the interest of the pupils in life upon the farm. This point of the programme is obligatory upon all pupils, and before long every teacher should be competent to carry out its provisions.

In the 5th form of the Public Schools, and in the lower forms (the first two or three years) of the High Schools, optional special courses have been provided in Agriculture under conditions which ensure their efficiency. It should perhaps be added that a good general education is obligatory in connection with all these courses.

To a very large extent the courses in Agriculture are as yet courses upon paper, but the Education Department has provided the machinery that is needed to make them a reality. All that is now needed is the de-

mand, and this the farmer should provide. It is undoubtedly true that the tendency of our school system has been toward city life and the professions. The rural school trustee, and the Public School Inspector, now have it in their power to give the rural schools an impetus in the right direction. When employing a teacher, Trustee Boards should take care that he is qualified for this special work, and they should make any provision that is needed to render this work effective. One thing is very certain—the rural districts will stand in their own light if they permit their continuation classes to become mills for grinding out either teachers or university matriculants. Provision may be made for such work, but it should not monopolize the efforts of the teacher, nor should the teacher be permitted to use the school for the gratification of his own ambition, or to save himself the labor of preparing himself to teach the new courses. As soon as possible, the teacher should qualify himself for his new duties, and both Inspector and School Board should see to it that he does so. There is real danger at present that the *vis inertiae* of the teacher will frustrate the laudable objects of the new programme. In the fifth forms and in the high schools, the courses in agriculture will exact a good deal from both school boards and teacher. The boards will be at a greater expense, and the teacher will need special qualifications. But the claims upon each will not be greater than those already incurred in connection with courses that lead to the professions.

Another phase of this question deserves the consideration of those who are interested in the welfare of the farmer. During the last three or four years the Legislature has made liberal grants for the development of technical education in the high and the public schools. As a result, this department of school work has made very rapid progress. Technical education has a direct bearing upon our manufacturing industries. It will not be unreasonable if agriculture asks for equal consideration. In his wise and patriotic scheme, Sir William Macdonald has recognized the claims of both manual training (called technical training by our legislature) and elementary agriculture. The Legislature has granted assistance to one half of his movement. To be consistent, it should grant at least equal assistance to the other. To sum up—it cannot be too strongly impressed upon the rural districts that the time has arrived for pushing their claims, and for assisting the Education Department in its attempt to regenerate the school system. This subject should be taken up immediately by the Farmers' Institutes, and they should make their influence felt, both with the Government and the general community.

Public Schools.—Nature Study Classes.

Form I.

Animal Life.—General appearance and habits of pet animals, their care and food; domestic animals on the farm, their care, habits and uses; birds, their nesting, song, food, migrations in the autumn; metamorphosis of a few conspicuous butterflies or moths.

Plant Life.—Work in school garden or in window-boxes: study of a plant, as a geranium or pansy, from slip or seed to flower; caring for plants in pots; buds, their preparation for winter, their development; autumn leaves, collections, forms, tints; economic fruits, collection, forms, how

stored for winter, fruit as seed holders, dissemination of seeds; roots and stems, uses, comparison of fleshy forms, how stored for winter.

Life on the Farm.—Harvesting, primitive and modern methods compared; preparation for winter; the barn and its uses; activities of the farm during winter; winter sports and social life on the farm; the varied operations of spring time; spring time as awakening to new life; effects of sun and moisture on the soil.

Form II.

Animal Life.—Life history and habits of domestic animals and of familiar wild animals, as the squirrel, chipmunk, robin, crow; earthworm, habits, structure, uses; toad, habits, structure, uses; observation of live insects and their activities, comparison of young and adult stages.

Plant Life.—Co-operative and individual work in school garden; cultivation of plants in pots with observation of the development of leaves and flowers; parts of leaves and flowers; change of flower to fruit and of fruit to seed; functions of the parts of flowers; the forms and uses of trees; activities connected with forestry and lumbering, with study of pioneer life and present conditions on the prairie.

Observation of farm, garden, and household operations.

Form III.

Animal Life.—Adaptation of different kinds of animals to their respective habits and surroundings; birds, life history of types, habits of wild fowl in different seasons; fish, forms and uses of different parts of the body, food and how obtained; life histories of moths, butterflies, beetles and grass-hoppers; useful insects, as ladybird and dragon fly; harmful insects; Nature's insecticides.

Plant Life.—Germination of seeds under controllable conditions and in the school garden and window boxes; opening of buds; study of the forms and functions of the parts of plants, and comparison of these forms and functions in different plants; observation of the culture of farm and garden crops and of orchard and shade trees; the observing and the distinguishing of the common forest trees.

Different kinds of soil, as sand, gravel, loam, leaf-mould and clay; experiments to ascertain how soils are composed, whether of mineral or of decayed organic material, and which best retains water. Additional phenomena of spring in the vicinity of the school, cause of snow melting, ice floating, etc.; how nature prepares the soil for growth of plants. Distinction between hard and soft, pure and impure water; tests and methods of purification of water.

Sources of Heat.—Experiments to show the effects of heat in the expansion of solids, liquids, and gases; practical applications. Temperature: thermometer, construction and graduation. Methods of transmission of heat, conduction, convection, and radiation; causes of winds and ocean currents; ventilation.

Form IV.

Animal Life.—Relation of fish, birds, and wild animals to man; life histories of conspicuous and economic insects; organs and functions.

Plant Life.—Study of organs of plants and their functions; study of economic and wild plants from seed to fruit in the school garden, home

garden, farm, and forest; weeds injurious to crops and methods of destroying them; buds and twigs; wood, rings, grain, and bark, uses, etc.

Observing local minerals and rocks, their properties and uses; experiments to show composition of soils and their relation to drainage, temperature, etc.; varieties of soils adapted to different crops; fertilizers, etc. Implements and tools used on the farm and in the household, mechanical principles applied in their construction.

The atmosphere; its composition; combustion, simple experiments, study of candle flame products; changes produced in the air by respiration; reciprocal relation of plants and animals as regards the atmosphere; impurities in air.

Gravity; air and liquid pressure, the barometer. Cohesion and adhesion, the nature of these forces; phenomenon of solution and diffusion; amorphous and crystalline forms of matter. Practical use of heat, steam, and electricity in connection with the study of industries.

Form V.

By direction of the Board, and with the concurrence of the inspector and with a programme and a time-table approved by him, a short course in Agriculture may be taken up in Form V., chiefly in connection with suitable topics under Geography and Elementary Science. The details of such a course are contained in the High School Special Lower School Course in Agriculture, which is given below.

High Schools.—Agriculture.

The special courses in Agriculture attached below are to be taken up in High Schools in continuation classes, only where the qualifications of the teacher, the equipment, the accommodations, and the organization, are satisfactory to the Minister of Education:—

Special Requirements. *1,—Experimental Plots; 2 School Garden; 3, Arboretum; 4, Science Laboratory.*

First Course.

1. *The Soil.*—Kinds of soil; heavy and light; warm and cold, sandy, clay, loamy, and humus; glacial, alluvial, marsh, and residual; characteristics of each, and the way each is formed. Local excursions for the study of soils.

Soil Water.—Uses of water in the soil; water capacity of different soils; capillarity and its importance; percolation of rain water; conservation of soil moisture and methods of conserving moisture; drainage and importance of removal of stagnant water.

Food Materials in the Soil.—How roots absorb; osmosis; relation of air to soil; need of air to roots; experiments in laboratory and in the plots.

2. *The Plant.*—The parts of the plant and their relations to the soil; light, and air; functions of the root, stem and leaf; germination of seeds of the common garden and farm plants, and the growth of the seedlings, propagation of plants by seeds, budding and grafting; fruits and seeds; weeds and weed-seeds.

How plants feed; air and soil food materials; photosynthesis; storage of plant food in various farm plants; annuals, biennials, and perennials of the farm.

The making and keeping of a garden: selection of seed and planting in experimental plots.

Second Course.

1. *The Soil.*—The First Course continued. Analysis of soils; the peculiar soil-properties which affect plant growth. Texture, coarse, open, loose, fine, hard, compact, stiff, mellow, porous, lumpy, retentive, leachy etc. Tillage, different methods for different soils and climate; improvement of soils. Plant food in the soil; rotation of crops and the food requirements of each crop; systems of rotation; underdrainage; bacteria in the soil.

2. *The Plant.*- The First Course continued. The botany of the crops of the farm: the uses of the different crops; how harvested; how planted; good and poor seed and importance of selection of good seed; grasses and forage crops, their value and identification; vegetable crops; plant diseases. Forestry on the farm, and the common trees and shrubs; leguminous crops and their special value.

3. *The Animal.*—Resemblances and differences between plants and animals; physiology of animals; feeding and digestion; rations; breeds; poultry; excursions to stock farms in vicinity; care of animals; ventilation of stables; bacterial diseases.

Rural School Gardens.

The presentation of the attitude of the Education Department towards the farming community would be incomplete without a statement of the provisions in the new Regulations for the encouragement of Agriculture and Horticulture, and for the improvement of the surroundings of the rural schools.

The Regulations provide as follows:—

"Any rural School Board which provides a school garden with the necessary equipment and accommodation shall be entitled to an initial grant not exceeding one hundred dollars, and a subsequent annual grant of ten dollars, provided the appropriation made by the Legislature will warrant such payment. Should the appropriation made by the Legislature not be sufficient in any year to meet the demands arising from the establishment of school gardens, whatever sum is granted for the purpose by the Legislature will be paid pro rata.

The area of the school garden must be at least one acre, in addition to that of the regular school grounds, to which it must be adjacent or from which it must be removed only by a short distance. The trustees must provide the necessary tools and implements, such as rakes, hoes, lines, pruning knives, etc., and must erect a suitable shed for use as a working laboratory and for the storage of tools, seeds, etc.

Such instructions will be given by the Public School Inspector to the trustees and teacher as will meet the special character of the locality and promote, as far as possible, a practical education; and the grant will be payable on the report of the Inspector, who will certify that the School Board has complied with the prescribed conditions."

LIVE STOCK.

Horses.

Q. Does the navel cord require attention? A. W. F. Kydd, Simcoe. Yes; tie it with a cord four inches from body, and cut below the cord.

Q. Should a mare with heaves be used for breeding purposes? A. No, in some cases the progeny have had the same disease.

Q. Would you expect a good foal from a thoroughbred mare and a heavy-draught stallion? A. No; the extremes are too great.

Q. Would you feed a yearling and a foal in the same feed box? A. No; the foal would get little or none of the grain.

Q. What is the best food for a foal? A. Three parts crushed oats to one part bran, with good bright clover hay.

Q. When should the foal be tried? A. When quite young.

Q. Should an over-check be used in carriage horse? A. No, it has a tendency to put neck in wrong position.

Q. Should semi-check be fastened in same bit the lines are? A. No, it pulls the bit too high in horse's mouth and makes the cheeks of the bridle bulge out.

Q. Why do you recommend a farmer who is feeding his horses meal, to give it to them dry?

Dr. Henry G. Reed, Georgetown: Because when an animal takes a mouthful of dry food he has to chew it longer before it is moist enough to swallow, and thus it is more thoroughly mixed with the salivary juice, which is an active digestive agent.

Q. What do you consider a good winter ration for a heavy draught colt six months old? A. Three quarts of oats every day, and all the well cured clover hay it will eat, with a turnip or carrot once a day.

Q. Do you consider corn silage good feed for horses?

Dr. H. G. Reed, Georgetown: No, if used at all it should be used carefully and in small quantities.

Q. For breeding which would you prefer, a good individual with a poor pedigree or a poor individual with a good pedigree? A. I would not breed from a poor individual no matter what his pedigree was. Get both good pedigree and good individual.

Q. When should a horse be watered, before or after taking his solid food? A. Under ordinary conditions he should be watered before he gets his solid food.

Q. At what age should a foal be weaned? A. At any time after it is five months old.

Q. What breed of heavy horses can a farmer most profitably raise? A. Either the Clyde or Shire; in my opinion one is as good as the other.

Q. Is a heavy draft horse of 1800 pounds weight worth more than one of 1600? A. Yes, if he is equal in other respects.

Q. Is it not true that a horse fed on clover hay alone will do much better than if fed on timothy hay alone?

Henry Glendinning, Manilla: Oh, yes; decidedly. The chart shows clover hay to be well balanced, while timothy is extremely wide.

Q. Should a brood mare do any work during the winter before foaling?

H. G. Reed, Georgetown: Brood mares should by all means have regular exercise, and light work will do her no harm.

Q. What kind of mare do you consider best adapted to breed to a Hackney stallion? A. Of course a pure bred Hackney would be the best, but otherwise always select a mare with a strong dash of thoroughbred blood.

Q. Why do you recommend clover hay for growing colts? A. Because it contains to a greater extent than any other the constituents that are necessary for the production of bone and muscle.

Q. If you were breeding to increase the size of your animals which would you prefer to have the larger, the male or the female? A. The female.

Q. Can a foal during the first winter do well if fed on whole oats? A. Yes a foal can masticate whole oats all right but chop would be just as good, possibly better.

Q. Is blindness in horses ever transmitted from parent to off-spring? A. Yes, certain forms of blindness are decidedly hereditary.

Q. When a horse is working hard and highly fed all the week how should he be fed on Sunday?

H. G. Reed, Georgetown: He should have his food reduced on Sunday and one meal should be a bran mash. If you give him his regular amount of food he should have some exercise.

Q. I have a foal covered with hen lice. I have tried all the ordinary remedies without any result. What more can I do? A. If your stable is warm, clip your colt and you will find the treatment will work all right.

Q. What kind of floor should I use for a horse which is weak in the knees? A. Put him in a box stall with a level floor, and feed him his hay and oats off the floor.

Q. Did you ever use coal-oil for bloating in horses or cattle?

John Gardhouse, Weston: I look upon it as a very safe remedy.

Q. Would you prefer a blocky built stallion to a rangy one in heavy horses?

T. G. Raynor, Rose Hall: Yes, by all means.

Q. How long would you leave the afterbirth before taking it from a cow? A. Not longer than two days. Take it away before the neck of the womb closes.

Q. Would crossing a driving mare with a draft stallion give you a general purpose horse?

D. C. Anderson, Rugby: Such a cross would not be advisable. It is too violent, and you would not get an exact union of sire and dam in the foal. You might get the light limbs of the dam and the heavy body of the sire, or the heavy limbs of the sire and light body of the dam. Neither conformation is desirable. Better have a driving mare bred to either a Coach or heavy road stallion. If the colt was well fed it would be heavy enough for general purpose.

Q. In your address you spoke of the "Feather" on the horse's leg. What is it? A. The feather on the leg of a draft horse is that fringe of hair down the back of the sinew. And when it feels soft and silky it is one of the best indications that the skin of the leg and the bone is of good quality. But if the feather is matted and feels harsh, coarse, wiry and hard, it is indicative of bone and skin of bad quality, and that in the fall of the year especially, there will be trouble from swelled legs and greasy heels.

Q. Why do you want a heavy draft horse long ribbed? A. If a horse is short ribbed he is light in his middle and is nearly always a poor feeder. He has not stomach enough to contain enough feed to serve him from one meal to another. When put into hard work he generally has a fagged out appearance. A light centred horse seldom weighs well, and weight in a draft

horse, if it comes from bone, sinew and muscle goes a long way to determine his commercial value.

Q. You say that it is seldom a draft horse has too short a back. Will a very short back not make him look too much in a heap? A. When a horse is well coupled together on top and has a short back, he must have the length below from the point of the shoulder to the back of the thigh, when so built he will stand the strain of drawing heavy loads much better than if he has a long loose back.

Q. You seem to think that the front feet are important. A. Yes, the front feet and hocks are the parts of either a draft or driving horse that come directly in contact with the hard work, and unless they are sound and good, a horse's usefulness will be very much impaired, and his commercial value very much lessened. Feet should be large and waxy in appearance. The sole of the hoof should be concave, the frog spongy, plump and elastic, because it acts as a buffer to take the concussion from acting too severely on the foot, pastern, and fetlock. See that both sire and dam have sound feet, free from flatness, brittleness, and are not contracted. There should be no "gumminess" about the hocks of the draft horse, as it indicates coarseness. They should be large, flat and firm and should be wide, especially from a side view.

A stallion whose feet are contracted and brittle, and whose hocks are puffy and fleshy looking, should be avoided as such hocks are generally associated with a coarseness throughout his whole conformation, and a general lack of quality. Before using a stallion, get the groom to lead him away from you. Stand square behind him, and see that he picks up his feet and places them on the ground properly, travelling in both trot and walk clear and clean,—not striking the ground first with the toe, and then bringing down the heel. If he does so he will be stilted in his movements and a stumbler. When he trots, see that he points his hocks a trifle in.

Q. How would you feed the colt? A. The first winter is the most important one in the colt's life. If it is underfed or neglected by being exposed to cold rains in the late fall, or bitter winter storms, and allowed to become stunted, we never can regain what we have lost. The aim should be to keep the flesh that has been put on the colt when running in the pasture with its dam. If allowed to lose this it will cost you more to put it on than to keep it on. Wean when about five months, feed a quart of whole oats and a little bran three times a day, all the good hay they will eat and three or four pounds of roots per day. When put on grass in spring for the first two weeks give them a few oats twice a day and a little hay to gradually use them to the succulent grass. The second winter they get no more grain than they got the first winter, no hay, but instead plenty of clean oat straw and a few more roots.

When they are two years and a half old they will earn their keep from that time on. Do not allow their feet to grow too long, pare or rasp them into shape at least twice each winter. Castrate the entire colts in June when they are about a year old. If you can get the service of a registered sire (and none other should be used) of good quality and fair weight for $12 or $14 the extra few dollars on service fee will be money well spent. The colt, when of a marketable age will bring 25 per cent more than one that has been bred from a common horse, whose only recommendation is that he has a fine looking top. But remember that he is too often burdened with fat, which can be put on at any time at a cost of $30, and lacks in quality and elasticity of movement.

I estimate the cost of raising a draft colt to be about $75. This includes $14 for service fee, $10 for loss of the summer labor of mare when running

with colt on pasture, the feed of colt until it is two and a half years old, nothing being allowed for care and attention. At present prices colts two-and-a-half or three years old will bring from $140 to $160 if they weight from 1400 to 1500 pounds.

Q. What do you feed your work horses in the fall doing farm work? A. I have a piece of corn sown near the barn. I start to cut it about the second week of August run it through the cutting box, feed a scoop shovel full of it three times a day, with a gallon of clean, whole oats at each feed. The cut corn forces them to masticate the whole oats as they cannot bolt them. Give them hay at night. This is the best feed for slow farm work; but for work on the road less corn and more hay, as corn would be too loosening for the quick, active motion required on the road.

Cows.

Q. If a cow aborted as a result of slipping on some ice, would you advise her removal from other pregnant cows?

Dr. H. G. Reed, Georgetown. Yes; no matter what the cause of the abortion, I would have her isolated from other pregnant cows.

Q. Can I profitably feed corn on the cob to cattle? A. No. It will pay you to chop it unless you keep a number of pigs to pick over the droppings.

Q. What simple treatment could a farmer adopt for just a simple case of bloating in cattle? A. Tie a gag in the mouth so as to keep it open and give some exercise.

Q. If a cow has recovered from an attack of milk fever, is it advisable to breed her again? A. Yes; but it would be well to be careful of her coming in as you know that she is susceptible to the disease.

Q. Is lumpy jaw an hereditary disease? A. Lumpy jaw is a contagious disease, but is not considered to be hereditary.

Q. What is the best dairy cow?

R. C. Fowler, Emerald. There are several breeds of dairy cattle each of which it is claimed is the best; but we find good and poor cows in all breeds. The best dairy cow is the one that will yield us the largest profit. This depends largely upon the individuality of the cow. Every farmer should keep a record of the milk from every cow, then he knows which cow is yielding him a profit and which one is merely a boarder, eating up the profits of the good cow. The very best cows we have should be mated with a good thrifty bull, from a good milking mother. If this practice is followed it is surprising what an improvement will be made in a herd in a few years.

There is one other point we should not overlook. We must remember that we have steer calves and poor cows to get rid of, so we should aim to have size as well as milking qualities. With careful selection a cow will have both; and such cows are the most profitable.

Q. How long do you milk your cows?

Geo. Carlaw, Warkworth. About ten months, we always milk the heifer the first year at least ten months so as to develop the long milking period.

Q. How old are your heifers when they drop their first calves? A. From two to two and a half years. We find we can develop their milk glands better, and they will give more milk than if left to freshen when they are three years old.

Q. What do you do for garget? A. Bathe well with warm water and vinegar three or four times a day and rub well with camphorated oil. Give as a drench Epsom salts, one to one and a half pounds; saltpetre, one teaspoonful; sweet spirits nitre, one ounce; mixed in three quarts of warm water.

Repeat this every two or three days until better. Milk out three or four times per day and reduce feed.

Q. How much milk should a cow give in a year? A. 6000 pounds of 3½ per cent. milk.

Q. How do you feed your grain ration? A. Ground fine, one half in the morning on roots, and one half on ensilage in afternoon.

Q. What kind of a bull would you use to grade up the cows we have at present?

A. J. Wagg, Mindemoya. A pure bred bull of good dairy type. Try to get one whose dam and granddam were good milk producers with no defects in the udder.

Q. Would it be well to have a heifer drop her first calf in the fall? A. Yes, if you have a warm stable. Milk her all winter, and then when she gets on the grass she will freshen up and you will have no difficulty in making her first milking period a good long one.

Q. What benefit is salt to a cow? A. Salt aids digestion.

Q. In feeding roots do cows need water? A. If cows will drink water they need it. A large milk producer requires a large amount of water.

Q. Would you recommend using a grade bull in any case? A. No: whenever you do you are taking a step backward.

Q. At what age would you have a heifer drop her first calf? A. At two or two and a half years of age.

Q. Is a large milk vein any indication of a good milker? A. Yes, almost a certain indication of a good milker. The large and more tortuous or crooked, the better.

Q. Should a cow be milked up to the time she drops her next calf? A. I would prefer drying her at least a month or six weeks before coming in.

Q. How long after calving is it before the cow's milk is fit to use?

Q. How long after calving is it before the cow's milk is fit to use? A. From seven to nine days before being used as human food.

Q. If a cow milked ten months after the first calf, and then was dry four months, would the tendency be for her to milk ten months the next year, or go dry four months before calving? A. The tendency would be for her to milk for about ten months the next year.

Q. How much exercise should a cow have? A. Give a cow all the exercise she will take naturally, so long as she is not uncomfortable with cold or wet.

Q. How often should cows be watered? A. At least twice a day. It is better to have water in front of them in the stable.

Q. How would low grade flour do for feeding to cows? A. I do not think it would be profitable, bran or even shorts would be better than flour.

Q. Should bran be fed wet or dry? A. I would prefer feeding it dry or mixed with other fodder.

Q. Are there not some people who are trying to raise cows to produce both milk and beef? A. Yes, but few if any, are making a success of it. They are undoing the work that the best breeders and feeders have been doing for centuries past.

Q. What would you do with those large milk producing cows when they are too old to give milk and you cannot beef them? A. (Voice from the audience): If you have a cow that gave you ten thousand pounds of milk per year for ten or twelve years, don't you think you could afford to give her a decent burial?

Q. How would you treat a cow that holds up her milk? A. Try to divert her attention from the milking by giving her some food or in some other

way. Do something to please the cow. Try to establish a confidence between the milker and the cow.

Q. Will a cow that is allowed access to the salt at all times ever take too much. A. I never knew of one to do so.

Q. Do you recommend mixing silage with other foods? A. Yes. If mixed with cut hay about twelve or twenty-four hours before feeding, the moisture and flavor from the silage will go through the dry hay, making it more palatible.

Q. Would oat chop and bran be a good grain ration for a cow? A. Yes. I would prefer adding a little pea meal also, as it is very rich in protein and we must have protein in food for cows. Bran, of course, is rich in protein.

Q. Would you recommend adding sulphur to salt for cows? A. Not usually. If your cows need sulphur you may give a little in the salt, but you will have to care for your cows well and see that they do not get wet.

Q. What point would you lay most stress on in selecting a good milking cow? A. I would want a large, well-balanced udder, with large and evenly placed teats and large milk veins extending well forward along the abdomen.

Q. Do you approve of feeding cows little and often or a large amount at once? A. Feed regularly and give the cow all she will eat up clean either twice or three times each day.

Q. Would barley be good in a mixture of foods in place of oats? A. I would prefer oats, barley is not quite so rich in protein.

Q. Is flax-seed a good substitute for the fat in milk? A. Yes; but it should be scalded before being fed.

Q. How much would you feed to a calf two weeks old? A. About two quarts of milk, and gradually increase the amount until you are feeding about three quarts.

Q. What other food would you give calves? A. Fine, well cured clover hay. Also a small quantity of finely ground peas and oats, fed dry. Scalded flax seed may be fed in the milk.

Q. Should calves not be fed three times a day? A. Twice a day seems to give as good results and does not make so much work.

Q. Which has the greater feeding value for milk, turnips or mangels?

C. E. Shearer, Vittoria. I think possibly there would be a slight difference in favor of the turnip.

Q. Are fewer silos being built or are farmers generally adopting them?

R. S. Stevenson, Ancaster. Silos are being erected in large numbers, and the use of ensilage for the feeding of stock is on the increase.

Q. Is rape a suitable food for milch cows? A. No. Cows that are fed any quantity of rape will give badly flavored milk from which it is impossible to make either high-class butter or cheese.

Q. What is a good winter ration for a dairy cow?

T. G. Raynor, Rosehall: In full milk, a ration of 35 pounds silage, 15 pounds roots, 12 pounds clover hay, and a meal ration of 4 pounds bran; 2 pounds oats, and 2 pounds pea meal should work well.

Q. What is a good ration for a steer? A. For a two year old steer finishing, 12 to 15 pounds clover hay; 30 pounds silage, or 40 pounds roots; and a grain ration of 2 pounds bran; 2 pounds oats; and 4 or 5 pounds of corn meal.

Q. Is there any advantage in salting hay? A. Yes, it preserves it, and stock relish hay and salt better.

Q. Can you hide the turnip flavor by feeding? A. Yes, for a time at least. Feed after milking with a good grain ration, mostly bran. Butter or milk used fresh is all right.

Q. Will it pay to feed dairy cows grain on good pasture? A. I believe it does, but only a little, enough to keep it in their systems. They will not shrink so much on dry pasture.

Q. Which is better for producing milk, bran or oats? A. Wheat bran is better, pound for pound.

Q. Is barley a good milk-producing food? A. No, I do not consider it such. It is better for fattening. It is also better to be used with other meal to give the best results.

Q. How long would you milk a cow after dropping her first calf?

L. E. Annis, Scarboro: I would not breed her for five months after calving and then milk her for 12 months.

Q. What would you do with a cow that had milk fever? A. Be very careful if you think the cow has a tendency to milk fever, to feed very lightly some weeks before she calves, and give her a laxative, and thus guard against the disease. But if she has it, get a veterinarian at once.

Q. What difference have you experienced between watering dairy cows out of doors and having the water before them all the time. A. I have found nearly 8 per cent. more milk on the same feed, by watering the cows inside.

Q. Can turnips be fed to cows after milking without tainting the milk? A. I do not think so, it is only a matter of degree of taint. By pulping and leaving in a heap over night and allowing to ferment you have only something worse with a worse flavor.

Q. What do you call a good meal ration for a milking cow? A. I find by mixing 5 pecks of oats, 2 pecks barley, 1 peck goose wheat, and sowing that mixture, I have an excellent ration, not only for milch cows but for little pigs, as well as for horses, and I can grow more bushels to the acre.

Q. How many pounds of this mixture do you think enough for a milker? A. That depends on the cow, her capacity, the length of time milking etc. Ten pounds is sufficient for an average cow per day.

Q. Is it necessary to cut straw to mix with ensilage? A. No. If the cow is getting a good allowance of silage, roots, clover hay, and meal. We need not expect that by fooling a dairy cow into eating a lot of dry straw that we are going to get in return a lot of nice milk. Give her all the straw she wants, but do not force her to eat it.

Q. Does silage taint the milk?

Chas. E. Shearer: Not if the silage is of good quality and is fed properly.

Q. Can turnips be fed so as not to taint the milk? A. Some people claim they can, but I will not risk it. While our manufacturers are doing their best to maintain our hold on the English market, I think it is to our interest as farmers to help them all we can, and as they object to feeding turnips because some will be careless we had better not feed them. The best authorities say turnips always taint the milk, so mangels should be used instead.

Q. Does separated cream take longer to churn than pan setting? A. Not if properly ripened.

Q. Can you raise good calves with the separator milk? A. Yes, by replacing the butter fat with linseed meal.

Q. What is the best method of cooling milk? R. C. Fowler, Emerald: You can cool with ice or cold water, by setting the can or pails in it and stir-

ring the milk so that a thick layer of cream will not form on the top. Whatever method is used, cool as low as possible, as quickly as possible, with as few utensils as possible. Each one must use common sense as regards the best method.

Q. Is airing milk not better than cooling with ice? A. No. In nearly all cases airing is only a means of cooling and is only beneficial to the extent of the cooling. In our hot summer weather the air is not sufficiently cool to bring the milk to a low enough temperature. Besides this, airing which is done in an impure atmosphere or with an aerator which is not perfectly clean, is apt to do more harm than good.

Q. Is milk likely to become contaminated while on its way to the factory? A. Not very likely, but as I explained, road dust is a serious source of infection, and we are likely to get some of it into the milk. If the milk is as cool as it should be the germs will not increase until the milk is heated at the factory, and then the maker is there to control the fermentation by adding a pure culture of the plants he desired to grow.

Q. Is there any way of getting a better quality of tin in our cans and pails? A. Yes, pay the price. The poor quality often used in our cans, and pails was brought into use by the price of tin rising and the people demanding cans at the old price. If we go to a reliable dealer and tell him we want the very best tin regardless of price we will get it and it would pay us in more ways than one to do so. First, our can would last much longer. Second, there would not be the same danger of little rust spots for filth to gather in and spoil our milk.

Care of Milk and Cream.

Q. Will creamery butter keep as well as dairy butter? A. J. Wagg, Mindemoya. Yes, better than some dairy butter.

Q. Will the Babcock tester give a correct test of milk? A. Yes it is the only reliable tester that I know of.

Q. Why does the richness of cream vary from the separator, it being set the same at all times? A. The richness of cream is influenced by the speed of the machine, the flow of milk into the machine, the amount of water used in flushing out the bowl, and, to some extent, on the length of time the cows have been milking.

Q. What is the cause of cream foaming in the churn? A. Foaming is caused by the cream being too sweet, too thin, or possibly too cold.

Q. Is there any cream that will not churn? A. I have yet to see the cream that will not churn if properly handled.

Q. What objection is there to milking with wet hands? A. Milking with wet hands is a dirty practice. We should remember that we are producing an article for human food, and the very cleanest methods should be used. Milking with wet hands invariably gives milk a bad flavor. Milk the cows with dry hands, after wiping the udder with a clean cloth.

Q. What temperature would you churn at? A. I cannot give you any fixed temperature. Churn at the temperature that will bring butter at from thirty to forty minutes, and will give you a firm butter. In my own work I find 60 degrees the proper temperature in the summer time.

Q. Which is there the most profit in, butter or cheese? A. Cheese making brings in a little more ready money, but it removes much more plant food or fertility from the farm than the butter-making does.

Q. Does pasteurizing milk injure it for food? A. No, pasteurizing makes the milk purer and better for food.

Q. What kind of cream separator would you buy? A. Buy the best you can get. Make the agent put one in for you on trial.

Q. How much butter will a pound of butter fat make? A. About one and one-seventh pounds of butter, depending largely on the percentage of moisture it contains.

Q. How would you prevent cream from ripening? A. By keeping the temperature down from the first.

Q. How many cows are needed before purchasing a separator? A. Four or five with a cream separator properly run, you will have an additional pound to a pound and a half of butter per week from each cow. One pound per week for forty weeks is forty pounds of butter; and this at fifteen cents per pound is $6. On five cows you would save $30 per year on an investment of $70.

Q. If butter-fat is lost in the skim milk it will not be wasted for the calves will get it? A. Yes, but it is too bad to feed the calves something worth 15 cents per pound when the same food value may be supplied for a cent and a half a pound. That is not business-like. Then with the cream separator the calves get the milk so much fresher, which is worth more than what is lost by having all the fat removed.

Q. What kind of a separator is used at the Guelph Dairy School? A. At present they have eight different kinds.

Q. If turnips taint milk, what can be fed to take their place? R. C. Fowler, Emerald: Corn silage or mangels. The very large coarse mangels are rather strong flavored and there is some danger from them, so it is best to use some of the finer varieties, for example the Yellow Intermediate.

Q. What bad effects are produced by adding warm morning's milk to that of the evening before? A. We have said that the germs which caused most of the disorder in milk grew most rapidly at about the temperature of the body, or the temperature of milk fresh from the cow. When the fresh milk is added, the temperature of the colder milk is at once raised and any germs which have been lying dormant because of the low temperature, immediately start to grow and develop gas, acidity, or some other disorder in the milk.

Q. What do you consider the best hand separator? A. I am not advertising any particular make of separator, and I could not say that one is superior to any other, for where one excels in one particular, another excels in something else. Where it is possible, one should try to see different machines work before deciding which one to buy. If any agent wants you to put in two or more machines in order to try the respective merits of each, be sure that they are under the same conditions. That is, be sure that the milk is at the same temperature, that the machines are run at their tabulated speed, that the same amount of milk is fed to each machine and that the cream is being taken at the same density. A separator should be washed every time it is used, so, it is quite an important point to have a machine that is easily washed. I consider all the well known machines, now being sold in this country, to be good working, reliable separators, and I would strongly advise any person who has a liking for any one machine to buy that one, for you will be better satisfied with it than with any other.

Q. What effect has scalding the whey on the whey vat? A. If the whey is heated to 165 degrees F., to 180 degrees F., nearly all germ life will be killed, but we cannot afford to be careless on that account. The heat is applied to-day and the whey returned to the farms to-morrow. As soon as the steam is turned off the whey begins to cool down, and if we try the temperature in the evening we find it is down to about 100 degrees F. to 115 degrees F. This is favorable to germ life, and as the

air around factories is often laden with bacteria there is very much danger of a considerable growth before morning. There is no doubt, however, that scalding at the factory is a good practice and should be encouraged.

Q. What can be done to induce makers to keep things neater and cleaner about their factories? A. In my opinion there is nothing that will keep a maker up to the mark as much as to have his patrons take an interest in the factory. Let every patron visit the factory and do not go alone, but take your wife and friends along and take a pride in showing off the factory where your raw material is manufactured. Ask the maker lots of questions so as to know something about the method of manufacture. If you notice any improvements in the factory, or surroundings, mention it to the man in charge. Nothing helps so much as a word of encouragement. This dairy business belongs to the farmers, and so sure as a man does not push his own business it will push him—to the wall.

Q. How can we get our cream to ripen sufficiently for churning? A. In creameries and some first class home dairies they have what is known as a "pure culture." This is a pure growth of one of those tiny plants we were talking about. They send to the Ontario Agricultural College, the Kingston Dairy School, or to some of the mercantile houses that handle them, and get a little bottle of pure growth of these tiny plants or germs, and by following the directions given soon get a smooth acid starter, which, when added to the cream, very soon brings it to the desired ripeness. In most home dairies, however, this practice can be followed with good results. When we have the cream ready for churning, take a bowl and scald it with boiling water, then pour about a pint of the cream into it and set it away, where it will be free from dust or strong smells. It is better to cover it with a clean cloth dipped in boiling water so as to be sure that no foreign material gets into it. When you have your cream pail emptied and thoroughly washed out pour this old cream in before putting any new cream in. Every time fresh cream is added it should be thoroughly stirred in with a tin dipper that will reach to the bottom of the pail. In winter a temperature of about 60 degrees F. will usually give good results but there is no hard and fast rule in this respect. If the cream is not ripening fast enough put the cream pail into a pan of hot water, and stir the cream until you have raised the temperature a few degrees, and you will aid the action a good deal.

Hogs and Bacon.

Q. At what age should young hogs be bred? T. H. Mason, Strafford-ville: They should not be bred too young. I prefer not to have them farrow before one year old.

Q. At what age is the cheapest gain made? A. It is well established by experiments that there is a steady continuous gain in the cost of production with the increase in age and weight, other conditions being equal. Prof. Robertson found at Ottawa, under winter conditions, that young pigs under 100 lbs. live weight required a little less than 3½ lbs. of mixed grain for a pound of increase live weight. When the same hogs were up over 200 live weight 6.97 lbs. of grain were required for a pound of increase live weight.

Q. What breed do you favor? A. I do not think there is as much difference between breeds as is popularly supposed. Experiments do not show that there is very much difference in the cost of production of the different breeds. On the other hand there is often a strongly marked dif-

ference in different animals of the same breed. Special attention to the selection of the sire and dam is very necessary and is too often neglected.

Q. How should our boars be handled? A. I do not think generally speaking that there is any animal on the farm so grossly mismanaged as the boar. At least I am sure this is the case in my own section. Owing to their unruly character they are generally confined in a very small, strong enclosure, and any sort of a sleeping place is given them. This is rarely cleaned out, and they are generally overworked and underfed, and, as a consequence, lose their usefulness. They should have a good dry bed, a large yard for exercise, be kept in a moderate condition, and be kept clean. Then we would expect good results.

Q. What makes pigs cripple in winter?

J. W. Clark, Onondaga. Feeding too heavily, lying in a damp bed, and lack of exercise.

Q. What remedy would you advise for crippled pigs? A. Change their feed, give a laxative food, provide a dry bed, and give a physic of linseed oil or salts. Linseed oil is best if pigs have lost their appetite. It is important that the pigs should never become constipated, or trouble is sure to follow.

Q. What material is preferable for building a hog-pen—stone, concrete or wood? A. Hogs do best in wood pens. Cement floors are all right, but they should have raised sleeping apartments.

Q. What is the best feed for a brood sow at farrowing time? A. Wheat bran a few days before farrowing. It is a very easy matter to ruin the digestive organs of young pigs or a sow by feeding too heavy chop. They seldom fully recover from such treatment.

Q. Would you advise letting young pigs eat from the trough with their mother? A. No, if you can avoid it, as the food for the mother is too strong for the young pigs. It would be better to provide a small trough and give the little pigs some milk and scalded shorts.

Q. What breed gives the best results for the packers? A. The packers agree that the large White Yorkshire makes the largest percentage of number one Wiltshire sides for export.

Q. Do hogs forced to weigh 200 lbs. at five and a half months old make No. 1 bacon? A. No. It is better to let the hogs grow on cheaper food and finish at eight months.

Q. Can hogs be fed at a profit on grain at one cent per pound and sold at 5 cents live weight? A. No; not as a rule. The farmer should aim to grow his hog on a cheaper food and finish on grain for the packer.

Q. Is sulphur, salt, and wood ashes good for pigs? A. Yes, but I would not feed sulphur unless my pigs had a dry pen and bed. Wood ashes or charcoal are relished by pigs. I feed a little salt in my feed every day as it assists in keeping their bowels open.

Q. What is the cause of our hogs coming down in price every fall before Christmas? A. Our English friends go off bacon and on game and poultry at Christmas and the bacon cured for the export trade cannot be held for any great length of time, so has to be lowered in price, in order that the laboring classes can buy it. Farmers would do well to try and have their sows farrow earlier, so that they could get them on the market before that time of the year.

Q. Why are our hogs not graded by the drovers? A. The farmer is hard to satisfy. Everyone thinks his hogs are as good as his neighbors. The man with a load of good bacon hogs helps to sell the poorer ones of his neighbor. If you have No. 1 bacon hogs insist that you get a better price

from the drover, for the packer culls out the poor ones and pays less for them.

Q. Do you find cement floors for hog pens satisfactory?

Robert Thompson, St. Catharines. Yes; but mine are built on a very dry foundation. If the soil is damp there should be two feet of earth taken out, a tile drain put in and the first foot filled in with small or broken stone or gravel, the upper foot filled with cinders or coal ashes and the cement floor laid on top of this. Then you will have a dry floor.

Q. What cross do you prefer? A. I prefer to have a York or Tamworth sow and cross to a Berk male, or if breeding pure Yorks I would prefer to have the sow of a larger, more loose or open build, to a more compact male.

Q. Would you keep a cross-bred sow to breed from? A. No; I would rather secure a pure-bred female. While there are some good cross-bred sows that will make good breeders the chances are greater, in securing pure-bred animals, that they will give better results.

Q. What is a profitable ration for growing hogs in winter? A. Pulped mangels, oats, barley, and flax, grown together and ground up very fine, and mixed with whey or skimmed milk and fed all they will eat up clean three times a day. Also give a few handfuls of the following once or twice a week:—Mix together one sack of charcoal, two barrels of wood ashes, and a pailful of salt. A few pounds of this put into the troughs once or twice a week will keep their digestion in good order. Also keep their pens well bedded and dry, and with a good breed of bacon hog it is possible to keep the cost of production down to between three and four cents per pound live weight.

Q. Are you ever troubled with foul teeth in little pigs?

W. C. Shearer, Bright: Yes, and I lost a whole litter of eleven before I found out the cause. The sow refused to let them suck and the whole eleven starved to death.

Q. What do you do now? A. I examine every little pig and break the foul teeth off with a pair of nippers before they turn black, which they will do in a few days if left in. They are no use to the pig anyway and never grow again after being nipped off.

Q. How would you kill lice on hogs?

T. G. Raynor, Rosehall. Rub the hogs over with a rag dampened with coal-oil. Any oil or grease will kill them.

Q. At what age would you recommend weaning pigs?

G. H. Hutton, Easton's Corners: At six weeks in spring and eight weeks in fall.

Q. Give five points in selection of a brood sow? A. The young sow should be selected from a mother of good bacon type, and one which has given large litters which have developed uniformly. The young sow should have twelve well developed teats as a further indication of fecundity. She should have evidence of a strong constitution, and have well sprung ribs and a back of great strength that will not weaken under continued breeding. She should possess all these points as well as the general characteristics of a bacon hog.

Q. What are some causes of soft bacon? A. Soft bacon is caused from lack of exercise, heavy feeding of corn, feeding grain without roots or green food, forcing hogs too fast, holding them on slack feed after they are ready for the market. When hogs are ready sell them. Injury in quality results from a too strong desire for higher prices.

Q. What is the cause of softness in bacon?

G. C. Caston, Craighurst: There is some difference of opinion as to

that, and various theories advanced. Doubtless there are several causes, such as unsuitable breeds and types, lack of exercise, lack of finish, thin unfinished hogs being apt to produce soft bacon: certain foods, such as corn, used exclusively as a grain food. But I am satisfied that prevailing cause in this Province is forcing hogs to a weight of 200 at six months instead of taking eight months to do it. There is a great tendency to do this when hogs are selling at high prices, such as have prevailed during the last two years. The hogs are kept penned up without proper exercise, and are fed almost entirely on a strong meal ration in order to get them up to the required weight in the quickest possible time. Exercise is very important to bacon hogs.

Q. Do you give them exercise when finishing? A. Yes, I turn them out at least three times a week and let them have a chance to root and wallow and ramble around for a few hours, and they thrive the better for it. When finishing hogs in the warm months of summer, I use a roomy yard with a shelter of boards over the nest in one corner as a shelter in case of rain, and I find this far ahead of keeping them indoors no matter how well the pen is ventilated.

Q. What is the best food for producing firm bacon? A. Experiments with different foods where the tests have been followed to the dressed and finished sides, seems to prove that there is no food that exercises so great an influence on the quality as the by-products from the cow. Skim milk, buttermilk, and even whey, are valuable along with the grain ration. As to grain, I do not feed any kind of grain alone, although I regard peas as the very best of our coarse grains for producing either bacon, beef or milk. I like a mixture of peas and oats, two of peas to one of oats and ground very fine. Peas and barley make a good mixture for the meal ration. When wheat is cheap we feed it mixed with barley. I have had good results also from rye.

Q. What is the best root for hogs? A. Undoubtedly the sugar beet. I have fed them right up to the finishing period with splendid results. In my opinion the sugar beet solves the problem of profitable feeding of bacon hogs in winter.

Q. How do you feed them in winter? A. Always pulped and mixed with meal.

Q. Do you believe in cooking roots for hogs? A. Yes and no. I believe for winter litters for two or three weeks after weaning, it would be best to cook the food and feed it a little warm especially where the pens are not very warm; and very few of them are warm enough. I would pulp or slice the roots and cook them along with shorts or middlings and feed warm along with skim milk. That is just for young pigs. For older ones I do not think cooking roots pays.

Q. What is the best way to feed meal, wet or dry?

Q. What is the best way to feed meal? A. I have always had the best results by soaking for twelve hours before feeding. But of course in winter when the weather is cold there is trouble with freezing, and then we have to feed it dry; but in that case it is always mixed with pulped roots.

Q. Do you believe in crossing bacon breeds? A. Yes: I believe it is an advantage in some cases. The Tamworth and Berkshire for instance make an excellent cross, but I would have the two breeds to be crossed pure-bred and stop at one cross. I believe it is a bad practice to breed from crosses.

Q. How should the brood sow be fed and cared for? A. The brood sow should have plenty of exercise, and be allowed to run on pasture in summer and in winter have a liberal allowance of roots—sugar beets are the best—and should always have a small grain ration along with it, something that is a bone and muscle builder, such as finely ground oats and a little skim milk. They should be kept in good condition, but not allowed to become too fat. In a few days after farrowing their feed should be gradually increased and they should be well fed while suckling the young. They should have warm and comfortable quarters in winter and a good dry bed. They are more susceptible to cold than other animals.

Q. Would you feed young pigs two months old with a part ration of turnips? A. Nothing better if milk is not available than to cook the turnips and mix shorts and a little oil meal with it.

Poultry.

Q. What size of an incubator would you prefer?

Robert Thompson, St. Catharines. Do not procure too small a one. I prefer the 200 or even 240 egg size as the same work will take care of the larger as well as the smaller, and if other people's experience is the same as mine the smaller sizes do not hatch so well.

Q. In regard to ventilation while hatching, what is the better plan? A. I believe that if the under ventilator is kept closed for the first eight days, then open a little further each day until, say, the twelfth day, when they should be open full size and allowed to remain so until the eighteenth day, when they can be closed, we will usually secure more chicks and not have so many that are unable to get out of the shell.

Q. What variety of breeds do you keep? A. The Barred Plymouth Ro ks and a rew White and Brown Leghorns.

Q. Which do you find the most profitable? A. The Barred Rocks, as they lay more eggs during the winter and of course are a better table fowl. The Leghorns lay better during the months of April, May, and June.

Q. What is the best floor for a hen house? A. I would prefer a cement floor, but it must be well drained so that there will be no dampness. If I had to choose between a close, damp, and poorly ventilated house, and one colder, dryer and better ventilated, I would choose the latter and make the roosting place warm by closing it in during the winter by curtains.

Q. What is the best breed of fowl?

F. C. Elford, Ottawa: The one you like best. There is no best breed for all purposes.

Q. What is the best breed for fattening? A. There are a number of good breeds that make good table fowl. I think there is more in the type perhaps than in the breed; there are good and bad in all breeds.

Q. What is a good feeder? A. For crate feeding purposes I like a bird that has a good lively appearance when on the ground. A good constitution is indispensable. The constitution is denoted by the head, short beak, wide between the eyes, lively eye and well colored comb, good back, long breast-bone rather than deep and standing on straight legs, short and well set apart.

Q. Would you advise the use of an incubator? A. Yes, if you want to raise more than 150 or 200 chickens.

Q. How would you run an incubator? A. Follow the instructions. Don't think you can improve on them until you have had considerable experience.

Q. What would you do with old hens? A. Do not have any hens over two years old. As soon as the breeding season is over and sometimes before, cull out the stock and feed them in a crate, giving a liberal allowance of tallow—one pound per day to fifty birds. Dress and put on the market before many spring chickens are fit for selling.

Q. What breeds would you recommend for the farmer to keep?

J. W. Clark, Onondaga: Rocks, Wyandottes, and Orpingtons.

Q. Are the Orpingtons as good layers? A. They have proven so at Ottawa and Guelph Experimental Farms.

Q. Are the Orpingtons as large and quick maturing birds as Rocks or Wyandottes? A. They are about the same size and mature very early.

Q. What would it cost to build a hen house for 100 hens? A. From $85 to $100, according to the way it was built.

Q. Would you build a hen house with cement walls? A. No, it would be too damp.

Q. Is it necessary to have a hen house so warm that it will never freeze in it? A. No, hens are much healthier kept where it is not too warm and stuffy.

Q. Will hens lay in a moderately cold house? A. It has been proven in many places that they will lay just as well if given plenty of exercise.

Q. How much room should each hen have of floor space? A. Not less than six square feet.

Q. How do you keep down the lice and mites? A. Spray the house with whitewash to which add crude carbolic acid. Keep the droppings cleaned out, oil the perches once a week with coal oil.

Q. What causes hens to get scaly legs? A. It is a small pericale boring under the skin of the leg.

Q. How would you kill them? A. Oil the leg with a mixture of sweet oil and coal oil half and half.

Q. What causes hens to get mopy and dull looking in the winter? A. In most cases it is indigestion from lack of grit in the gizzard. Hens should have plenty of grit of some kind always before them.

Q. What causes hens to eat eggs? A. In most cases it is for lack of animal food.

Q. Is there any cure for a hen that eats eggs? A. If you can find only one cut her head off, that is the safest way. If you have several take a sharp knife and cut the bill back until it is quite blunt. It being quite sore they will give it up.

Q. What grain is best for laying hens? A. Wheat is best, but corn is very good especially in cold weather. Hens like variety of grains mixed.

Q. Would you feed a warm mash in cold weather? A. Yes, in the morning.

Q. When would you feed roots? A. For a noon feed with grain at night.

Q. How soon after the chickens are hatched should you feed them? A. Not sooner than 36 hours.

Q. What is the best feed for a young chick? A. Rolled oats; but give grit first.

Q. How often should they be fed at first? A. Twice a day for two or three days is often enough, after that three or four times. Feed at regular hours.

Q. At what weight should chickens be cooped to fatten? A. When they weigh about three to three and a half pounds.

Q. How long will it take them to fatten? A. About three or four weeks.

Q. What is the best food to fatten on? A. The meal of ground oats, one third; ground buckwheat, one third; barley chop, one third; and skimmed milk made to a porridge.

Q. What causes roup in fowls? A. Damp hen houses, chickens crowding in small coops late in the fall, becoming warm at night, and catching cold when they come out in the morning.

Q. What will it cost to keep a hen one year? A. From 75c. to $1 a year. On a farm where the hens can have the run of the grain fields it will materially lessen the cost.

Q. How many eggs should a good hen lay in one year under proper management? A. Upwards of 150 eggs. It will depend upon the strain of fowls you have. Some individual hens will lay as many again as others.

Q. How can we select a good layer from our utility breeds? A. As a rule the hen with a small clean cut head and a full bright eye and well developed in the rear part of the body will be a persistent layer.

Q. Can a laying strain be bred up the same as a dairy cow? A. Yes, by using trap nests and watching your hens, and setting eggs only from the best layers.

Q. Do hens require animal food to make them lay in winter? A. Yes.

Q. What kinds of animal food are the cheapest and best? A. Beef heads and livers boiled are cheapest in cold weather. Green cut bone is probably the best where it can be got. In warm weather I should use beef scrap, blood or meat meal, for sale by the dealers.

Q. What kinds of green food do you recommend? A. Mangels or sugar beets are good, cut clover or clover leaves steamed and mixed in a mash will be relished by the hens.

Q. How long is a hen profitable as a layer? A. Not for over two years old.

Q. How can you tell the age between one and two year old hens? A. Always mark the chicks by punching holes in the web of their feet each year.

Q. Can the desire of brooding be bred out of hens? A. Yes, by never allowing them to set.

Q. How would you break up a brooding hen? A. Confine her in a slatted crate and put in a cool airy place and feed well. Never allow the hen to remain on the nest over one day before you coop her up and it will not take so long to break her off.

Q. How can you get hens to moult early in the season? A. Confine them in pens for two weeks, and feed sparingly so as to reduce them in flesh; then feed liberally on foods rich in fats such as sunflower seeds, etc.

GRAINS AND ROOTS.

Corn.

Q. Do you recommend corn as a grain crop in Ontario?

T. H. Mason, Straffordville: I am very sure that where proper varieties are selected and good cultivation is given, that corn will succeed admirably in a very large portion of the Province, and will give a larger yield of pounds per acre than any other grain we raise. Then the stalks,

if well cared for, are quite useful for cattle food. A fair crop of corn under favorable circumstances would be 100 bushels of ears per acre, equal to say 50 bushels shelled corn, 2,800 lbs. of very valuable grain per acre. This is often exceeded on rich soils in favorable years.

Q. How do you keep the crows from pulling the corn?

C. E. Shearer, Vittoria: By using coal tar on the seed.

Q. Did your corn make good silage this year?

Mr. McCullough: Although my corn was late, by wilting it well it made first-class silage.

Q. Can you give me the name of some good varieties for grain production? A. Southern Ontario—Wisconsin, Earliest White Dent, Essex Dent, Yellow Dutton Flint; Central Ontario—Snub Nose, White Dent, Essex Dent, Yellow Dutton Flint; Central Ontario—Snub Nose, Longfellow, King Phillip, Yellow Canada, Compton's Early, White Star; Northern Ontario—Blue Blade, Early White Flint.

Q. How should the grain be kept? A. After husking it should be kept in cribs. These buildings are usually raised a foot or more from the ground, not more than five feet wide, any length, enclosed by narrow boards say 4 inches, placing them far enough apart so that the ears will not drop through, thus ensuring a free circulation of air. They should not be placed against another building, and special care should be taken to have the corn thoroughly dry before placing in the crib.

Q. Will corn deteriorate in quality in Ontario, is it necessary to continually import seed from the United States? A. Corn will not deteriorate in Ontario if proper care is used in selecting the seed. None of our farm grains respond so quickly to selection and cultivation as corn. In fact, I believe that it is a great mistake for a farmer not to raise his own seed corn. Having found out by a little experience what variety suits you own farm and locality best, and then save your own seed corn. The best time is when the corn is ripening. Go through the field and select the earliest, largest and best formed ears, leave enough husks on so that it can be braided and then hung up and see that it is thoroughly dry before heavy frost comes. The sweet varieties of corn should have artificial heat so as to make sure of their being thoroughly dry, as very often their vitality is low.

Q. What kind of silo would you recommend for the average farmer? A. While the cement silo would undoubtedly be the most durable they are very expensive. For the average farmer the stave silo would probably be the most satisfactory.

Q. What is the proper stage in the growth of corn in which it should be cut for ensilage? A. In the glazing stage. Corn has a value of 186 lbs. digestible matter per ton at the tasseling stage and of 340 lbs. digestible matter per ton at the glazing stage.

Q. How far apart would you plant the rows? A. About three feet and the plants eight inches in the row.

Q. Would it not do to sow corn broadcast for the silo? A. No, it is a waste of seed, and you would not get nearly as much digestible matter.

Q. If you plant corn shallow how do you prevent the crows from pulling it up? A. I soak a little seed in a diluted solution of strychnine and acid, scatter a very few seeds over the field and it will drive away all crows.

Q. In the county of Huron several farmers have stopped filling their silos on account of the silage always coming out sour. What do you think is the cause?

F. A. Sheppard, Queenston: I would imagine that they were using a variety of corn that did not fully mature in your section or else they are putting it in too green.

Q. Does the juice ever run out of your silo after being filled? It does here. A. No, I never saw a drop of water come from our silo. Your corn is too soft and green.

Q. What stage of the ripening would you put it in at? A. At the same stage as if I were cutting for husking, and wanted to still have the dry stalks in the best condition for feeding.

Q. What varieties do you use? A. Wisconsin, Earliest White Dent, White Cap, Yellow Dent and Leaming. I think you would do better in Huron with such varieties as Compton's Early and Longfellow.

Q. What is your method of preparing the soil for corn?

W. C. Shearer, Bright: I prepare my land in the ordinary way and then let it lie for about four days. By that time the weeds have sprouted and I go on and mark it with the marker and plant it with the hand planter, putting five grains in a hill about two inches deep. I then put the harrows on and drag it both ways. This disturbs all the weeds that have started. I then let it rest for four or five days until the corn has started and put the harrows on again, going over it both ways. This kills all the weeds on the surface and gives me very little work with them all season.

Q. Does the harrowing not disturb or spread the corn? A. No, the harrows very seldom touch it at a depth of two inches and the dragging leaves very few weeds that have not started so it gives me less hoeing to do.

Clover.

Q. Which do you consider better to sow with spring grain, Red Clover or Alfalfa?

F. A. Sheppard, Queenston: I would prefer the red clover for plowing under and Alfalfa for permanent pasture.

Q. Is it better for the soil to top dress with manure or to plow under? A. Top dressing is preferred by most people.

Q. How deep would you plow for corn? A. About four or five inches.

Q. Which would you consider the best treatment of a clover field, to plow soon after harvest and leave bare throughout the winter, or to leave until spring and then plow? A. I would plow as soon as possible after cutting and keep well cultivated until fall. By working it in that way we would have the surface soil fairly clean and free of weed seed, and the sod would be well rotted and the plant food made available.

Q. Is it a good plan to sow wheat on a clover sod that has only been down one year? A. Yes, I consider a clover sod one of the best foundations for a crop of wheat, provided the land has been well worked.

Q. Have you had any experience in feeding ensilage to horses? A. Yes, we have been feeding it now to our horses for four years with good results. We feed a small ration of silage night and morning mixed with a little oat chop and bran to balance it up and feed clover hay at noon. My horses keep in good condition and appear to be perfectly healthy.

Q. What time would you sow lucerne?

J. W. Clark, Onondaga: Sow in April or the fore part of May.

Q. What is the best crop to sow lucerne in? A. I have good results sowing in barley and peas, sown one bushel per acre.

Q. Does it do as well sown on fall wheat? A. No, not as a rule, the seed being quite large it does not get covered well enough.

Q. Would you harrow lucerne after sowing on spring grain? A. Yes; it should be covered from one to two inches.

Q. Would sowing ahead of the drill tubes cover too deep? A. No.

Q. Would you pasture first fall after seeding? A. Not unless it made a very rank growth and then not very late.

Q. Is it a good pasture for stock in the summer? A. It cannot be equalled.

Q. Will cattle bloat on lucerne? A. I have never had a case yet, and my cows after being kept in the yard all night are let out early in the morning into the field up to their knees. Mr. Jas. Douglas, of Caledonia, has been growing lucerne for upward of thirty-five years, and never had a case of bloat.

Q. Is lucerne better hay for feeding stock than red clover?

J. W. Clark, Onondaga: I have found it much better if cut at the proper time.

Q. Do you cure it the same as red clover? A. No, it should be raked up before it gets dry or the leaves will break off. Coil it up in small coils and let stand to cure in the coil.

Q. Does it make a good hog pasture? A. Nothing can equal it for hogs, if kept down. It is better to have two paddocks and let one grow up three or four inches before you shift.

Q. Is lucerne better for hogs than rape? A. They like it much better and it comes on in the spring much sooner.

Q. Have you ever fed lucerne cut to hogs in the winter? A. Yes, it makes a cheap and excellent green feed. If cut up fine and scalded it is equal to green feed.

Q. How would you feed it? A. Mix chop and well cured lucerne together in a big vat and pour scalding water over it and cover it up. Let this stand for a day and you have excellent feed for growing pigs.

Q. Would you advise sowing plaster on clover?

Wm. Elliott, Galt: Yes. Plaster has a special value for the clover crop. Clover treated with an application of plaster has a more luxuriant growth, is darker in color, and stands dry weather better.

Q. What is the value of clover as a soiling crop? A. Clover forms one of the most useful and valuable crops for soiling purposes, producing a large amount of good nutritious feed.

Q. Will frost affect ensilage? A. Yes, it will freeze; but it will thaw again, and cattle will eat it readily.

Q. What variety of corn do you recommend for ensilage purposes? A. Many good kinds are in the market to-day. Any variety that will produce an abundance of stalk, and as much grain as possible, will do.

Q. Would you advise plowing down a clover sod for the purpose of growing corn? A. Yes, a clover sod is one of the best soils in which to plant corn. The heat evolved by the decomposition of the clover is just what the corn plant requires.

Q. Would you advise planting corn in hills for ensilage purposes? A. It is very immaterial, but if your ground was dirty it would probably be better to plant it in hills, as it could be worked much better that way.

Q. How many pounds of red clover and timothy would you sow per acre?

W. S. Fraser, Bradford: Ten pounds of red clover and no timothy.

Q. Why not sow timothy? A. Because I do not want to grow it at all.

Q. Why? A. Red clover is a land improver, and if well cured makes a much better hay, whereas timothy is perhaps the most exhaustive

crop we can grow, and the feeding value of timothy hay is much less than clover.

Q. How about the second year? A. Don't have any second year; red clover will not give a crop the second year. Have another field seeded, and in this way your farm is made more productive.

Q. Is alfalfa hay as good feed as red clover? A. Yes, if properly cured it is much richer in protein. Its analysis shows it to be the same feeding value as bran.

Q. Do you mean to say that a hundred weight of alfalfa is equal to a hundred weight of bran? A. Yes, less the amount of energy that is exhausted in digesting it.

Q. How much hay can you expect in a season from an acre of alfalfa? A. It will give three cuttings, say five tons or more.

Q. How long will it stay in the ground? A. If well cultivated and well treated as long as you want it, twenty-five years or more. It is a perennial.

Q. How many pounds would you sow per acre? A. Twenty pounds per acre with a thin seeding of barley. Avoid pasturing it close in fall, in fact it should not be pastured for two or three years, when it will stand it. I have sown it twice and had no stand. There are many who have had such an experience and afterwards succeeded well. Scientists tell us that a certain bacteria is necessary in the soil for its growth. If it is present, small white excrescences appear on the roots, continuous growing will develop this bacteria, and when it is not present a couple bushels of earth taken from land on which alfalfa does well, and sown on a couple of acres will introduce this bacteria, and ensure the growing of alfalfa.

Q. How would you cure it? A. When almost one-eighth in bloom cut after dew has risen, coil same day, and leave in coils for two or three days, then open and expose to the sun for half a day and draw to barn.

Q. Why do you speak so strongly in favor of clover as compared to timothy? A. Because clover makes the land fat and the cattle fat, and timothy makes both land and cattle poor.

Q. What is the best variety of clover?

A. J. Wagg, Mindemoya: Red clover is the best for general purposes, especially if crop rotation is followed. If on low clay land alsike will not kill so readily as the red, and, on high lands with an open subsoil, lucerne will give good results, although it must not be pastured too closely until well established, which will take two or three years.

Q. Is timothy hay good for calves? A. No, it is poor in protein and is not easily digested.

What kind of soil will lucerne grow on?

F. C. Elford, Holmesville: Lucerne will grow on any kind of soil with a dry subsoil. It will not flourish with wet feet.

Q. Can you pasture lucerne? A. Although it is not particularly adapted to pasturing, it does furnish good pasture if we are careful to let our stock on before it gets too rank and take them off before they eat it too close.

Q. Does allowing a field of lucerne to seed kill it? A. No; we have had several crops of seed off the same field, and it is still producing good crops.

Peas, Rape, etc.

Q. How should seed peas be treated in order to destroy the pea weevil?

W. E. A. Peer, Burlington: Thresh immediately after harvesting, and store away in tight cotton bags until two years old. During the first

year the peas are stored away, the pea weevil matures and emerges from the peas, but it is unable to escape though the bag, and so dies without doing any further injury. By the second year all weevils are dead, and there is no danger of spreading the pest by using seed so treated. Another method is to spray the seed peas with coal oil, using about one gallon of oil to twenty bushels of peas.

Still another method is to fumigate the peas as soon after threshing as possible with bisulphide of carbon. Place the peas in a tight barrel or box and pour over the seed an ounce of bisulphide of carbon for every one hundred pounds of seed, and cover over very closely for about forty-eight hours. This material soon evaporates, and being heavy settles down through the peas and destroys all animal life with which it comes in contact.

Q. Would you roll the land directly after seeding, and leave it so rolled?

T. G. Raynor, Rosehall: Much depends on the condition of the soil and kind of soil. The roller aids germination, but I like to leave the surface rough to prevent evaporation.

Q. Would you roll fall wheat or rye? A. No, not until spring anyway when dry enough. The roller may be used in preparing the seed bed.

Q. Would you plow level, heavy land in narrow ridges or wide ridges? A. I prefer wide ridges and then open cross furrows, into the furrows. It is largely a matter of drainage.

Q. How often would you sub-soil? A. Often enough to keep the soil open, perhaps once in five years.

Q. Why does grain and new seeding do better on corn ground than on turnip ground? A. Turnips seem to take more from the land especially if the tops are fed off as well.

Q. Why does grain seem to do better on raw land than on sod land at times? A. This depends upon the season. If sod becomes dry and loose where turned down it prevents the capillary water from coming up far enough.

Q. How do you plant artichokes?

F. C. Elford, Holmesville: The same as you would potatoes and cultivate same.

Q. How would you get the seed? A. Get a peck or two from a reliable seedsman and plant a small patch in the field you intend keeping for artichokes. Harvest the small patch, and plant the whole paddock the next spring.

Q. Will rape seed the year around?

G. H. Hutton, Easton's Corners: No, rape is an annual and seeds only in warmer climates.

Q. Do hogs relish rape? A. Yes, the plant is richer than clover in nitrogen, and is crisp and succulent.

Q. In your system of curing clover does the hay heat in the mow? A. No: when free from foreign moisture there is no heat emitted. I say this from experience I have had by pulling out sticks which I placed in the mow.

Q. Is there any difference in the color of the hay on the outside of the mow and in the centre? A. None whatever.

Q. What seeding would you recommend for seeding down? A. Sow eight pounds of red clover, two of alsike, three of timothy. Sow before the drills and give a stroke of harrow crosswise, thus the land is level and the bulk of grass seed is between the drills of grain.

Q. What kind of bottoms are in your mows?

Henry Glendinning, Manilla: My mows are double boarded and stables underneath.

Q. How can clover seed be tested at home as to vitality? A. By counting out one hundred seeds as they come, placing moist blotting paper in a warm plate, and count out the seeds as they germinate, making a memorandum of the dates, thus one can form a good idea of the strength of seed and an accurate idea of vitality.

Q. How is rape sown?

G. H. Hutton, Easton's Corners: Rape may be sown either in drills or broadcast. By sowing in drills thirty inches apart the land may be cultivated and the animals then pasture between the rows, doing less injury to the growing crop.

Q. Is it a nutritious food? A. Yes, it is equal to clover, has a nutritive ratio of 1-5.6, and yields on the average about 16 tons green food per acre.

Q. What proportion of roots and grain do you recommend? A. Feed about pound per pound of roots and grain.

Q. Are the roots better cut? A. No, I do not think so, especially mangels or sugar beets. It would possibly be found necessary to cut turnips and mix a little dry meal with them to get hogs to eat them if they have been getting mangels or beets.

Improvement of Cereal Grains by Seed Selection.

Q. Do you mean to say that we can keep up the yield of grain by simply selecting high class seed?

A. L. H. Newman, Ottawa: Yes. Other things being equal, the yield may not only be kept up but may be greatly enhanced by judicious selection, especially where the selection is made by hand, right in the field.

Q. Does fumigating for pea-bugs injure the vitality of the peas? A. No.

Q. Would barley that had been badly colored by rains be eligible for registration, providing all other requirements were fulfilled? A Yes. The color of the grain has little or no influence on the quality of seeds.

Q. Can you prevent a variety from "running out" by continuous selection? A. Yes, under ordinary circumstances you can.

Q. Would pure-bred seed bought by me and sown this year produce a crop which would be eligible for registration? A. Yes, but it would come in another class known as "Improved registered seed."

Q. Is a seed producer to reap any benefit by being a member of the McDonald-Robertson Seed Growers' Association? A. If he wishes to produce seed for sale he shall find immediate profit. He can demand a higher price for it, and shall be assisted in getting sale for it, to a certain extent, through the medium of the Association. Then, again, if he does not wish to sell any of the seed he shall have the advantage of having high class seed grain for his own use, and this should be of great value to him.

Q. Can you recommend any special varieties of grains? A. There are certain varieties which have shown their superiority at our Experimental Stations, but it will be necessary for each grower to decide for himself just which of these will be most satisfactory for him to grow on his own farm. He can do this through the medium of the Experimental Union, the working of which is under the direction of Prof. Zavitz, of Guelph.

Q. Do you recommend farmers in general taking hold of this work of the McDonald-Robertson Seed Growers' Association? A. No, there are a good many farmers who actually have not the time to carry on this work and do it thoroughly, and unless this can be done there is no use of undertaking it. Then, again, there are others who have the time but not the patience to do accurate work. This class of people should never undertake this work. Therefore I recommend for this work only such men as will do the work systematically and thoroughly, when the production of registered seed is the object of their endeavor.

Q. Can our Experiment Stations not do this work of seed selecting, as laid down by this Association, better than we farmers can? A. No. The Experiment Stations can do, and are doing, a great deal of valuable work, but they cannot do the work referred to as effectually as can you yourselves on your own farms. Good high class varieties can be introduced by the Experiment Stations but we have no guarantee whatever that any variety shall continue to be high class where no discrimination is made year after year, between high class and inferior grain for seed. Therefore, in order that the standard of the variety be kept up, it is necessary for us to make selection on our own farms.

Q. Would you cultivate the soil for wheat the same way as for oats? A. Not quite. The ideal seed bed for wheat, in the opinion of the majority of intelligent wheat raisers, is one that is compact below but well pulverized at the surface. Oats, on the other hand, seem to be able to produce a fair crop, at least, on almost any tillable soil, the character of the soil seeming to be of less importance with oats, probably, than with any other grain.

Q. Has selection more to do with keeping up the standard of the variety than has cultivation? A. I think not. Where cultivation is neglected, I do not think it possible to keep up the standard of the variety by merely selecting the best grain for seed.

Q. How much seed should be sent to the seed laboratory to test for purity? A. About 2 oz. for clovers and one half pound for larger seeds.

Q. Is the low percentage purity, as found in some samples, caused chiefly by the large number of weed seeds? A. Yes. In most cases this is the cause.

Q. Do you find that clover seed having a dull color, possesses poor vitality? A. Yes, although occasionally we find seeds possessing very good vitality but which are quite badly discolored.

Mangels.

Q. Do you manure in the fall for mangels or corn?

L. E. Annis, Scarboro: Yes, I manure in the fall for both corn and mangels. I plow early, quite shallow and after cultivating I put on the manure and plow it under shallow and then cultivate and keep the soil stirring.

Q. Do you sow mangels on the flat or in drills? A. I sow in shallow drills and put on a heavy roller to flatten it down and pack the soil around the seed and then begin at once to scuffle close to the seed.

Q. What is the best variety of mangels? A. The Yellow Intermediate or the Yellow Leviathan, they are both good croppers, good keepers and easy to harvest and also give a nice flavor to the milk.

Q. How do you test your mangel or corn seed for vitality? A. I put a dark flannel cloth in a soup plate, and sprinkle over the seed, then cover

with two or three thicknesses of flannel and make very wet with warm water. Set in the window in the sun among the house plants, and keep warm and moist and the seed will germinate very quickly.

Weeds.

Q. Generally speaking, how would you kill couch grass?

L. H. Newman, Ottawa: In the first place, do not attempt to eradicate this pest during the wet weather. On the other hand, as soon as the crop is off, plow lightly, then harrow with the ordinary harrow and if necessary cultivate with the spring tooth cultivator. This shakes tahe roots free from the soil and makes it possible to gather them up with the horse rake. Burn as soon as they have dried sufficiently. Repeat the process two or three times. Late in the fall rib up the land into drills and allow to stand over winter, giving the frost a chance to render material assistance in the eradication. The following spring plow about the end of May, cultivate well and put in some hoed crop, or summer fallow, although generally speaking, summer fallowing is seldom necessary. A carefully cultivated crop of rape is recommended as being particularly effective in destroying this pest.

Q. How would you kill mustard? A. Where your grain crop is badly infested with this pest I know of no better remedy than that of spraying. By this method you will kill the mustard plants sprayed, and thus not only prevent them from going to seed, but will prevent them from drawing their nourishment and water supply, necessary for the successful growth of the grain plants. After harvest harrow the ground or gang-plow and harrow. Cultivate at intervals throughout the autumn, and rib up, the last thing before freezing. Put in a hoed crop the following spring and cultivate thoroughly. Observe shallow cultivation and grow plenty of clover with grain crops.

Q. How do you destroy cut worm?

L. E. Annis, Scarboro: A preventative is better than cure—by not allowing a grass crop the second season. Grow lots of clover and plow it under. The grubs then have no chance to propagate.

Q. Would you roll land after sowing a grain crop? A. If the land was sufficiently dry and loose I would roll and harrow at once unless the land was very light and gravelly and then I would not always roll.

Manures.

Q. Would it pay to buy commercial fertilizer for our farm crops? A. A farmer would do well at first to experiment on his fields with small plots of nitrogen, potash, and phosphoric acid, and find out what his soil lacks, and then he can perhaps supply the lacking elements.

Q. Have ashes much value as a fertilizer? A. They certainly have, especially on sandy soil or for fruit trees they cannot be equalled.

Q. Has salt any manurial value? A. No, but it assists in unlocking plant food and holding moisture.

Q. Would it pay a farmer to cut his straw for bedding? A. It certainly would, for it is less bulky to handle, a splendid absorbent of the liquid manure, and it can be worked in the surface soil in the spring quite easily.

Q. What is the best means of retaining soil moisture? A. If you can work your manure in the surface soil, it acts as a mulch to the crop. Have your land worked down fine, and keep it from becoming crusted on top.

Q. Would you advise harrowing after the crop was up? A. If the soil was crusted on top I would harrow, do it before the crust gets too hard as soon as possible after the rain.

Q. Would you advise spreading manure on the field when the snow was a foot deep?

J. W. Clark, Onondaga: Yes, I would advise spreading it on at any depth rather than piling it where it would heat.

Q. Would you consider the effects as lasting if manure was spread on the surface as when plowed in four inches deep? A. If manure is worked in the surface soil it has a better effect on the crop just sown. If plowed down and turned up again the second crop will be benefitted.

Q. How deep would you plow? A. Not over four or five inches.

Q. Why do you advocate shallow plowing? A. By plowing too deep you have to keep the humus at too great a depth in the soil.

Q. How would you subsoil? A. Sow clovers, lucerne standing five or six years is the best subsoiler known.

Q. Which is the most value as a fertilizer, the liquid or the solid parts of manure? A. From the analysis given the liquid parts are from two to fifteen times richer in plant food.

Q. Which is the best for a grain crop, barn-yard manure or commercial fertilizer? A. Good stable manure with the liquid parts well mixed in and applied in the surface soil has given excellent results, the liquid parts being available for plant food at once.

Q. What is the best time to apply manure?

Robert Thompson, St. Catharines: We find that it pays us better to draw out and spread as it is made each week during the season. We get the work over during the winter when we have more time, and it is on the ground ready for the spring crop.

Q. Is straw of any use as manure? A. Yes, especially on heavy clay land.

Q. Does it pay to sow clover to plow under? A. We seed all of the grain crops, and plow under the clover the following spring, and find that it is the cheapest fertilizer we have.

FRUITS AND VEGETABLES.

Q. What would be a good list of apples in the county of Glengarry?

Harold Jones, Maitland: The best apples for this section for summer would be the Yellow Transparent, Duchess, Red Astrachan: for fall, the Wealthy, Scarlet Pippin, Fameuse, McIntosh Red: for winter, Stark, Scott's Winter and Golden Russet.

Q. What varieties of raspberries would be suitable for this district? A. The Cuthbert, Golden, Queen, and Conrath in red, golden, and black, would do well in Lanark for the average farmers' garden.

Apples.

Q. When should apples be gathered?

Robt. Thompson, St. Catharines. If for barrelling they should be pulled when fairly well colored but not allowed to get too ripe.

Q. Should they be allowed to lie on the ground in piles to sweat? A. No, the sooner they are sorted and placed in the barrels or boxes the better.

Q. Should orchards be cultivated? A. They should not be allowed to get into a stiff sod, but should either be mulched or the grass kept cut or pastured by calves or sheep, or better still allow the hogs to run in the orchard

without being ringed, as they will root the ground over and either eat up the fallen apples or prevent the young codling moth from hatching and going up into the trees.

Q. Would you recommend the planting of Ben Davis apples? A. Not in the counties where Baldwin, Greening, or Spy apples can be grown to perfection.

Q. What distance would you plant apple trees? A. They should not be planted closer than 40 feet, and should be kept well cultivated until twelve to fifteen years old, allowing them to be well grown before checking them to secure fruit.

Q. What crops are best to grow in the orchard? A. While the orchard is young, any hoe crop. If grain is sown a strip a few feet wide should be left on either side of the rows, so that the cultivator can be used often.

Orchard Fruits.

Q. What are the best varieties of apples to grow for commercial purposes?

G. C. Caston, Craighurst. King, Spy, Baldwin, and Greening would be a good selection for a commercial orchard, though you might add to it Ontario and Stark.

Q. These are all winter apples; what about fall apples? A. We have too many fall varieties now in the Province, and it is questionable whether it is wise to add to them. But if you do, probably the Alexander, Colvert, and Blenheim would fill the bill. Then there is a class that may be called late fall or early winter, or in other words Christmas dessert apples, such as the Snow and McIntosh Red, which are profitable varieties to grow in sections where they succeed well. But they are so susceptible to fungus scab that they require a thorough and persistent spraying to make them profitable. There is a good demand for these varieties however, when they are clean and well grown.

Q. The King is a poor bearer? A. Yes, but it can be vastly improved in that respect by top-grafting it on some good hearty stock. It sells higher in the British market than any apple sent from Canada.

Q. What about the Ben Davis? A. It has been so far one of the most profitabe varieties, but it is a question whether it has been overplanted. There is a probability that it will eventually be discounted on account of its lack of quality. If it is desirable to plant that class of apple I think we have a decidedly better apple in the Gano which is said to be a seedling of it.

Planting and Care of Orchards.

Q. Do you consider it makes any difference whether trees are planted on a northern or southern exposure?

Major James Sheppard, Queenston. Yes, I prefer a northern or eastern slope: the trees do not suffer so much from the wind, and are not so subect to sun scald.

Q. Do you prefer to plant in the fall or spring? A. I prefer to plant in the spring, but would purchase trees in the fall and heel them in over winter, for the following reasons: 1st, I can keep them better than the nurseryman will; 2nd, I will have them on hand when I am ready to plant; 3rd, I am more likely to get what I order.

Q. Which are the best six varieties for export? A. That will depend on location, some varieties do better in some sections than in others.

Q. What is required in an export apple? A. Fair size, good, bright red color if possible and above all good shipping qualities.

Q. Would you recommend a man to plant an orchard of ten acres all in Ben Davis? A. No, nor in any other single variety.

Q. What do you think of the idea of planting an orchard 20 feet apart, every other tree being Ben Davis, and cutting out the Ben Davis trees, after the trees begin to crowd each other?

Major Jas. Sheppard, Queenston: I would not favor the idea. I am afraid I would have poorly shaped trees as close planting tends to high, upright growth.

Q. If you wanted to grow Kings would you get young trees or would you top-graft on some hardy stock? A. I would top-graft. I never saw as good Kings on their own stems as I have seen on grafts.

Q. What color is the Rome Beauty, and do you consider it a coming apple? A. Bright red. I have no personal knowledge of the apple.

Q. Which makes the best stalks for grafting, Tolman Sweet, or Pewaukee? A. The Tolman Sweet.

Q. Do you think either of them as good as naturals? A. Yes, I think Tolman Sweet is.

Q. In grafting a young tree, would you cut off the main stem or put the scion on the limbs? A. I would prefer letting the tree grow a few years and grafting the limbs.

Q. Do you think spraying will prevent worms in apples? A. No; spraying will help but it is not a complete remedy.

Q. How many broods of Codling Moth are there in a year? A. That depends on climate. Where I live there are three, and in the northern sections only one.

Q. Does whitewashing trees do any good? A. Not very much, but in some cases it seems beneficial.

Q. Is it a good practice to throw ashes over trees? A. Yes, the alkali has a cleansing effect, and there is a high manurial value in the ashes.

Q. Would you consider ashes worth ten cents per bushel to apply on an orchard. A. Yes, I would like to have some at that price.

Q. What are ashes worth to apply on an orchard? A. That would depend largely on the quality and the purity of the ashes. I could not give an exact figure.

Q. Is hen manure good for trees? A. Yes, notice the trees on which the fowls roost or under which the chicken coops are kept.

Q. In pruning a tree do you consider it good work to cut out the centre? A. No; thin the trees, but don't cut out any particular part.

Q. How many ashes would you apply to a full grown tree? A. About half a bushel.

Q. What is the best strawberry? A. There are a great many good kinds. People in our district (Queenston) favor the Williams. Clyde is the heaviest harvester I have ever had: it is a little soft for shipping long distances, but is first class for family use.

Q. How do you plant your strawberries? A. Plant with a spade in what we call a matted row, rows four feet apart and plants two feet apart in the row, let them fill up between the plants and spread out sidewise until the rows are about 15 inches wide.

Q. How many crops do you take off a strawberry bed? A. Only one. It is easier to plant a new patch than to clean up an old one and you get larger crops off a new patch.

Q. What kind of soil is best for a hot bed? A. A light soil with a large amount of humus in it. It holds the moisture better, requires less watering, and the plants make a good root system.

Q. How often would you advise cultivating an orchard? A. At least once a week or oftener if necessary to form a loose mulch on the surface.

Q. What time in the season would you stop cultivating? A. From the 1st to the middle of August.

Q. Do you use cover crops? A. Yes.

Q. How deep would you plant fruit trees?

A. E. Sherrington, Walkerton: About three inches deeper than in the nursery.

Q. What is humus? A. Decayed vegetable matter and plant food.

Q. How far will tile take the water on either side? A. It depends on the nature of the soil and depth of the drain but from two to four rods I think.

Q. How deep would you cultivate orchards? A. From four to six inches. We practise shallow cultivation.

Q. Would you recommend tying a weight to a limb that is growing too close or upright? A. Yes, anything that will bring it to its place.

Q. Do you prune the head when planting? A. Yes; snape the head of tree and cut back to balance with the root.

Q. Would you cut back the roots when planting? A. Yes; cut off all bruised or broken roots, giving a slanting out from the under side of root.

Q. Can you grow the Spy in Algoma? A. I think so by grafting it on some hardy stalk, such as the Tolman Sweet.

Q. What time would you prune fruit trees? A. During the mild days of March and in early April.

Q. Why do trees grow hollow? A. They either have what we call "black heart," or they have been damaged by bad pruning.

Q. Would you recommend the growing of pears here? A. I could not say, positively. Try some of the hardy varieties such as Flemish Beauty and Clapp's Favorite.

Q. Is spraying necessary in growing fruit? A. Yes; spray early and late.

Q. How often do you spray? A. From three to five times; it depends on the weather.

Q. What is the effect of the lime in the Bordeaux mixture? A. By the use of lime you can use more of the Copper Sulphate and not injure the foliage..

Q. How many trees will a barrel of the mixture spray? A. From fifteen to twenty-five; it depends on the size of the tree.

Q. Would you add coal-oil to the mixture? A. No.

Q. How would you protect trees from sun-scald? A. By placing a piece of board or bark on the south side of tree when planting.

Q. How late would you let the clover grow before plowing it under? A. Plow in during the month of May.

Q. Would you pile manure around the roots of the trees?

Q. Would you pile manure around the roots of the tree? A. No, spread it evenly over the land, for the feeding roots are farthest from the tree.

Q. Does the bark louse injure the tree? A. Yes, scrape the rough bark off and spray with kerosene emulsion, when the lice are running.

Q. In pruning would you cut out the centre of the tree? A. No: give the tree a general thinning, leaving the heavy wood evenly distributed throughout the tree.

Q. What would you do to keep the borers out of a tree? A. Keep your orchard free from grass or weeds. Clean cultivation is the best for getting rid of the borers.

Q. Would you recommend putting stones in the bottom of the hole before planting the tree? A. No, I prefer good soil.

Q. Does it injure the tree to pile the ashes around it? A. Yes, spread evenly over the soil.

Q. In planting trees do you put manure in the hole? A. No, put in nothing but good soil.

Q. Many varieties of fruit that have been largely planted for commercial purposes are attractive in appearance but lacking in quality. Is it advisable to continue planting varieties of this description exclusively?

W. E. A. Peer, Burlington: No. As these varieties become better known upon the markets there will be a decrease in the demand for them by the consuming public, who will require quality in preference to appearance, although both are requisite for the best returns. The Ben Davis apple, although it has been one of the best commercial varieties of apples, is now receding in public favor. Many dealers, when laying in their stock, request that no Ben Davis be supplied.

Q. During the spring and early part of the summer the limbs and leaves of my apple trees are badly infested with small green lice. How should these be treated? A. These insects are probably the apple aphis, and injure the trees by feeding on the sap, which they suck out of the leaves and tender twigs, thus weakening the vitality of the tree. In order to combat this pest successfully it will be necessary to spray with kerosene emulsion, or whale-oil soap, and this should be done as early as possible after the aphides have hatched from the eggs in the spring.

Q. What time would you sow a cover crop?

F. A. Sheppard, Queenston: Any time in August.

Q. What do you do to prevent mice destroying young trees? A. Bind them with tar paper in the fall.

Q. How high up would you put the paper, and how do you fasten it on? A. I cut the strips of paper about one foot wide and long enough to go around the tree with a good lap. Tie it on with a fine wire or cord, press down well to the ground, and throw up a small mound of earth around the tree to prevent mice from working under the paper. This has proved very successful with us.

Q. I have only one plum tree. How do you account for its blossoming freely yet never setting any fruit? A. The fact that the tree blooms regularly and yet never sets fruit would sugggest the possibility that the blossoms are self-sterile, or unable to fertilize themselves. A great many of our varieties of plums are so constituted, and require the presence of other varieties in order that efficient pollination may take place.

Q. How far apart should plum trees be planted? A. Fifteen by eighteen or twenty feet is a very satisfactory distance for setting plum trees. When setting trees of any kind of fruit the idea to be kept in mind is that the root and branch system for one tree must not interfere with that of another.

Q. How should one who has had little experience in fruit culture proceed in the selection of varieties for planting? A. If one has nad no experience in the selection of varieties the only safe course for him to pursue is to choose those varieties that are succeeding well with his neighbors, or such standard sorts as have gained a widespread reputation. Leave the planting of unknown varieties to the Experiment Stations, where it rightly belongs, and whose business it is to investigate, as the planting of these is a risky busi-

ness, and should they prove unprofitable the experience thus obtained is dearly paid for.

Q. Would you advise spraying peach trees?

F. A. Sheppard, Queenston: Yes, spraying is good for any kind of tree. There are a number of insects that attack the peach and also several fungous diseases.

Q. Will spraying plum trees prevent rot, and if so what mixture would you use? A. Yes, the rot of the plum is a fungus and can largely be kept in check by spraying with the Bordeaux mixture. I would advise giving one good application early in spring before the leaves start, to kill any spores carried over from last year.

Q. What mixture do you consider best for San Jose Scale? A. I like the lime, salt, and sulphur mixture best.

Q. What are the proportions? A. Lime 40 pounds, sulphur 20 pounds, and salt 12 pounds. It requires to be mixed together and boiled for two hours and applied hot, with a very fine nozzle.

Q. What about crude oil? A. It is all right on apple, plum or pear trees, but the peach tree will not stand it.

Q. Does the crude oil have any bad effect if applied to often? A. I cannot say positively, but my own opinion is that if applied year after year for a number of years that it will.

Q. Is lime and sulphur mixture any good when cold A. The majority of people think that if it becomes cold it is not much use.

Small Fruits.

Q. Does the white grub bother the strawberry?

A. E. Sherrington, Walkerton: Yes, but if only one crop is taken from a bed you will not be bothered with it.

Q. What is the cause of mildew on gooseberries? A. It is a fungus. The best remedy is lime of sulphur.

Q. How do you destroy caterpillars on currants or gooseberries? A. With Hellebore, at the rate of one half ounce to the gallon of water.

Q. I have black currants planted ten years and cannot get fruit. A. Prune or cull old wood to six or seven canes of young wodd, and if growing strong cut back.

Q. How often would you renew strawberries? A. Every year, for by this plan you will get good crops of better quality.

Q. How many quarts of strawberries should a good bed yield per acre?

W. A. E. Peer, Burlington: The stawberry is one of those fruits that respond readily to favorable conditions and proper treatment. Generally speaking the yield will vary from 3000 to 6000 quarts per acre, but this may be increased to 15,000 quarts or more by close attention to all the details of cultivation from start to finish.

Q. Is it possible to get a crop of strawberries if only one variety is planted? A. If the variety planted has a perfect bloom it will fruit when planted alone, but if it is imperfect in its blossom, then the planting of a suitable perfect blossoming variety in alternative rows or every third row is necessary in order to supply the pollen that the imperfect blossoms require before fruit can develop.

Q. Should strawberries be planted in the spring or fall? A. Spring is the generally accepted time for planting strawberries, and the earlier the better, so long as the land is not tilled before it is in proper condition for cultivation.

Q. What distances apart would you recommend for setting strawberry plants? A. The rows may be placed from three feet to three feet six inches apart, and the plants from fifteen to twenty-four inches apart in the rows according to the vigor of the variety or varieties grown.

Q. How long should a strawberry bed be allowed to fruit? A. It is not advisable to allow more than two crops of berries to be harvested from a bed before breaking it up, and with many commercial strawberry growers not more than one crop is often taken. The best sample of berries is obtained from newly set patches and after the patch has once fruited it often becomes infested with diseases of various kinds, and the labor required to keep it clean is frequently as great as that required for starting a new bed.

Vegetables.

Q. Can you hasten the germination of carrot seed?

C. E. Shearer, Vittoria. Yes, by rubbing the seed hard to remove the little spikes from it.

Q. How may the onion maggot be controlled?

W. A. E. Peer, Burlington: Avoid planting onions on the same land year after year. Select land as far from the land used the previous year as circumstances will allow. Good results have been obtained by cooping a hen and chickens in the onion bed and allowing the chickens free range. They soon learn to catch the little flies that lay the eggs upon the bulb or leaves of the onion. The maggot hatches from these eggs and penetrates the bulb of the onion where it feeds until the vitality of the onion is destroyed, and then it passes on to another. When an onion shows signs of being infested with the maggot it should be pulled up and the maggot destroyed, so that it can do no further injury.

Q. How may plants such as cabbage or tomato be protected from the ravages of the cutworm? A. If a limited number of these plants is being set out it would be advisable to encase the lower part of the same with stiff paper, letting this collar of paper enter the ground for an inch or two and project above the ground three or four inches. When preparing the land for planting crops subject to attack from the cutworm good results would be obtained by placing poisoned baits, such as fresh clover, or a mixture of bran and molasses saturated with Paris green, at short intervals over the ground. The worms when searching for food will eat these, and thus be disposed of before they have a chance to do any injury. If on going into our cabbage or tomato patches we find plants that have just been recently cut, a search in the surface soil surrounding these plants will nearly always reveal the cutworm which should be destroyed to prevent any further injury from it.

Tomatoes.

Q. How would you handle tomatoes to get them early?

F. R. Sheppard, Queenston: Fairly good results can be obtained by sowing seed in hot beds in March; when the plants are two inches high, transplant into another bed from four to six inches apart each way. Keep the end of the leaves pinched off so that they never completely cover the ground. This allows the free circulation of air through among the leaves, and makes the plants stocky and hardy. When danger of frost is over, block them out with a spade and transplant them carefully to the field without knocking any of the dirt off the roots, and they will scarcely know they have been moved.

Q. How far apart do you plant tomatoes in the field? A. Three and a half or four feet each way.

Q. What are the best early and late varieties? A. Dominion Day and Earliana for early and for late Ignotum, Livingston's Perfection, Favorite, Stone, Royal Red, Success, and others.

Q. How often do you cultivate your tomatoes? A. As often as possible, at least twice a week as long as you can get through them.

Q. What kind of fertilizer is best for tomatoes? A. A liberal application of barnyard manure will give the best results, but I like to supplement it with a small amount of a complete commercial fertilizer at time of planting, if you wish to get them ripe unusually early.

CARE OF COUNTRY ROADS.

Q. What is the most important part of road-making that the pathmaster can accomplish with statute labor?

Major Jas. Sheppard, Queenston: The most important thing the pathmaster can do is to improve the drainage.

Q. Are ordinary side ditches sufficient for draining the common clay roads? A. Yes if kept clear and brought to a grade by statute labor and kept properly finished.

Q. Will tile draining improve clay roads? A. Yes in every case.

Q. Do you consider it a good practice to put one tile drain in the centre of the road? A. No, I would rather put it outside the wheel tracks on the side the water is coming from, that is, the high side.

Q. If the road was flat, do you not think it would be better to have it in the centre than to have no drain? A. Yes; but the objection is that the water has to come under the road to get to the tile. Two smaller tiles one on each side would be much better than a large one in the centre.

Q. On many hills holes form in the spring just as if there was quick sand underneath, what is the cause and can anything be done to remedy it? A. The trouble comes from the fact that different layers of soil are exposed and the water comes out where the soil is more sandy or gravelly. If the side ditches are deep enough a tile laid diagonally across the road just above where the slough forms will often prevent the trouble, or a tile laid down the hill outside the wheel track, or in the ditch on the hillside is a good plan.

Q. Does it pay to use a road grader to smooth a road in the spring? A. It is very important to smooth the road in the spring and every road overseer ought to see that his road is gone over as soon as it is dry enough to bear the teams, and again after the spring rain is over, but there is a cheaper way than using the road grader. A common log scraper drawn by one span of horses will do almost as much work at less than half the expense.

Q. Is concrete tile pipe a success or are they injured by frost? A. Where they are properly made and large enough to carry the water they are a great success. I have never seen the frost injure them.

Q. How large can they be made? A. Moulds are made from four inches to three feet.

Q. Can they be made out of native rock cement? A. I have seen some tiles made out of native rock cement, but I do not think it is safe. A good brand of Portland cement should be used.

Q. What is the best way to keep roads open in winter? A. Encourage the building of wire fences then use a disc and where possible follow with a roller.

REPORT

OF THE

FARMERS' INSTITUTES

OF THE

Province of Ontario

1904

Part II.—Women's Institutes

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.)

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REPORT OF

The Women's Institutes of Ontario

1904

ANNOUNCEMENT OF THE SUPERINTENDENT.

A perusal of the following table will show that the growth of the Women's Institutes in Ontario during the past year is beyond the expectations of even the most sanguine.

	1903	1904
Membership	4,565 (To end of June)	5,433 (To end of June)
Attendance	22,013	44,698
No. of meetings held	619	960
No. of papers given	1,018	1,848

The increase in membership is nineteen per cent, with only one new Institute, while the increase in attendance has more than doubled. This indicates that a more general interest is being taken in the work and we are justified in looking for a still greater rate of increase in membership throughout the coming year. This growth does not in itself give to those not directly connected with the work an adequate idea of what is being accomplished through the medium of what is probably the most important educational work recently undertaken in the rural districts.

There is a general misconception as to the real object of the establishment of these Institutes throughout the rural districts and small towns of the province. Many are inclined to look upon them as an educational movement for the purpose of teaching the women of the farm how they may undertake the farming operations which are now for the most part carried on by men. This is not the province of the organization, although it is true that instruction is given in dairying, bee-keeping, and poultry raising, to a limited extent, for the benefit of both the men and women of the farm. The main object of the Women's Institutes is to instruct the home-keepers in methods which will lessen their work and increase its efficiency. The mothers and daughters are given an opportunity for social intercourse and an interchange of ideas for which they have not an opportunity in any other organization. Many women who have considered it impossible to improve upon their methods of work have found the experience of others most helpful along lines in which they thought perfection had been reached; and on the other hand housekeeping devices which through long use seemed to them unworthy of mention have been hailed as filling a long felt want. The past year's work and the outlook are alike a vindication and an inspiration of enthusiasm. There seems no doubt that the Women's Institutes are giving real and valuable help to the women of the country in the best way by enabling them to help themselves. The possibilities of the work are unlimited, and in the development of the possibilities each and every Institute can rest assured of the assistance of the Department and my best wishes.

GEO. A. PUTNAM,

Superintendent.

Toronto, Oct., 1st, 1904.

REPORTS OF LOCAL

FOR YEAR ENDING

Number.	Institute district	Membership December 1903	Membership to June, 1904	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts. Cash on hand per last report.	Members' fees.	Grants.	Receipts from conventions, etc.
							$ c.	$ c.	$ c.	$ c.
1	Amherst Island	66	55	12	760	16	19 42	13 75	20 00	22 45
2	Brant, North	113	105	11	388	26	19 42	6 25	20 00	.....
3	Brant, South	200	165	25	910	60	15 33	42 84	35 00	.....
4	Bruce, Centre	72	46	32	471	30	.....	20 55	30 50	.....
5	Bruce, South	100	43	20	718	20	30 31	1 75	20 00	.....
6	Bruce, West	93	88	15	453	16	29 34	13 00	30 00	.....
7	Carleton	.....	14	.....	.....	.....	.....	.....	.....	.....
8	Dufferin	134	95	9	647	26	28 09	19 45	20 00	.....
9	Durham, East	124	120	17	627	22	9 99	34 05	40 00	.....
10	Durham, West	85	44	4	81	4	40 65	18 50	45 00	.....
11	Elgin East	166	83	10	693	26	10 90	27 50	45 25	.....
12	Grey, Centre	129	156	6	922	36	12 57	22 00	20 00	8 98
13	Grey, North	173	177	10	1,790	28	61 39	8 35	20 00	24 45
14	Grey, South	79	79	25	605	81	12 24	17 50	40 00	.....
15	Haldimand	109	104	28	656	64	.....	7 50	20 00	.....
16	Halton	504	509	79	3,384	121	50 91	132 75	35 00	8 73
17	Hastings, East	261	172	13	1,299	32	30 50	35 50	20 00	.....
18	Hastings, North	76	58	8	530	19	38 47	9 50	10 00	.....
19	Hastings, West	105	49	9	323	27	28 92	12 25	20 00	.....
20	Huron, East	184	173	65	1,748	130	13 60	45 50	10 00	17 76
21	Huron, South	53	69	21	307	31	6 03	14 00	20 00	6 62
22	Huron, West	93	70	24	990	60	1 75	22 15	20 00	18 00
23	Kent, West	74	61	12	825	22	9 37	17 75	32 25	.....
24	Lanark, South	.....	12	.....	.....	.....	.....	.....	.....	.....
25	Lennox	53	.....	11	233	27	4 07	12 75	30 00	.....
26	Lincoln	81	56	8	382	15	33 50	12 00	18 00	.....
27	Middlesex, North	31	117	34	1,293	51	.....	29 90	.....	.....
28	Middlesex, West	44	56	5	150	9	15 24	12 25	.....	.....
29	Monck	44	69	13	199	.....	13 84	7 00	30 00	.....
30	Muskoka, South	42	36	9	248	25	14 84	8 25	20 00	.....
31	Northumberland, East	95	90	13	735	36	4 84	29 00	35 00	.....
32	Northumberland, West	72	76	10	392	21	23 10	11 25	35 00	.....
33	Norfolk, North	98	45	12	205	19	7 78	9 00	30 00	.....
34	Ontario, North	77	28	10	200	9	36 30	7 50	35 00	.....
35	Ontario, South	123	35	13	403	24	32 37	13 25	20 00	.....
36	Oxford, South	223	224	42	2,269	73	44 41	66 75	21 00	.....
37	Peel	182	198	21	1,976	96	64 95	50 50	25 00	.....
38	Perth, North	85	62	.....	.....	.....	12 75	16 25	13 00	21 60
39	Perth, South	85	9	32	1,054	42	9 81	15 50	20 00	.....
40	Peterboro, East	.....	50	9	105	10	.....	9 00	10 00	.....
41	Peterboro, West	65	60	13	469	18	20 84	15 75	15 00	.....
42	Renfrew, North	.....	44	3	445	8	.....	5 50	10 00	.....
43	Simcoe, Centre	86	98	8	922	25	26 47	22 50	30 00	.....
44	Simcoe, South	78	54	12	272	24	11 62	19 00	30 00	.....
45	Simcoe, West	112	155	27	3,684	74	34 51	38 75	20 00	.....
46	Union	80	59	5	539	20	18 25	15 00	32 50	.....
47	Victoria, East	94	74	15	990	14	31 20	19 25	20 00	.....
48	Victoria, West	81	107	18	539	31	1 33	21 25	30 00	.....
49	Waterloo, North	147	128	13	968	26	34 71	33 50	30 00	3 60
50	Waterloo, South	104	216	11	650	23	.....	51 75	30 00	.....
51	Welland	35	42	8	139	22	28 21	7 75	20 00	.....
52	Wellington, South	47	25	11	386	15	.....	4 50	30 00	.....
53	Wellington, West	101	171	20	923	36	.....	26 00	45 00	.....
54	Wentworth, North	112	89	10	700	17	5 60	23 50	40 00	.....
55	Wentworth, South	196	236	50	2,682	89	1 67	18 75	40 75	.....
56	York, East	147	97	24	1,049	31	32 59	25 50	40 00	.....
57	York, West	109	94	15	372	21	51 53	23 75	30 00	.....
..	Oxford, North (defunct)	13	.....	.....	.....	.....	.....	.....	.....	.....
	Total	5,935	5,433	960	44,698	1,848	.....	.....	.....	.....

WOMEN'S INSTITUTES,

MAY 31st, 1904.

Receipts.				Expenditure.												
Receipts from excursions.	Miscellaneous.	Balance due Treasurer.	Total receipts.	Due Treasurer per last Report.	Expense for meetings.	Secretary's salary, officers' expenses, etc.	Postage and stationery.	Printing.	Advertising.	Lecturers' expenses	Lecturers' allowance.	Periodicals for members.	Miscellaneous.	Balance on hand.	Total.	Number.
$ c.	$ c.		$ c.	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	.....	.....	75 62	....	8 50	8 00	2 82	16 65	2 50	.....	.....	22 45	3 00	11 70	75 62	1
.....	.....	.....	45 67	....	1 65	.....	1 75	1 00	.....	14 10	.....	4 40	.....	22 77	45 67	2
.....	.....	.....	93 17	....	17 19	10 00	16 34	6 00	1 10	20 30	.....	.....	.....	22 24	93 17	3
.....	37	.....	51 42	....	4 25	14 50	2 58	.....	8 78	.....	8 70	4 00	1 37	7 24	51 42	4
.....	42	.....	52 48	....	2 50	.....	2 10	6 80	.....	2 00	.....	1 00	9 40	28 60	52 48	5
.....	32	.....	72 66	....	8 00	10 00	2 50	2 00	.....	5 30	.....	7 77	14 50	22 09	72 66	6
.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
38 00	.....	.....	105 34	....	14 85	15 50	5 88	2 50	7 85	8 00	6 00	.....	3 25	41 51	105 34	8
.....	1 00	.....	85 04	....	5 25	.....	3 25	.....	1 50	5 35	.....	.....	61 66	8 03	85 04	9
.....	.....	.....	104 15	....	4 25	5 00	5 55	2 25	2 00	12 08	.....	6 99	9 27	56 76	104 15	10
.....	2 95	.....	86 60	....	12 25	5 00	3 05	1 00	3 00	29 75	.....	.....	14 05	18 50	86 60	11
.....	.....	.....	63 55	....	8 64	7 00	7 01	3 00	.....	.....	.....	13 83	3 15	20 92	63 55	12
.....	5 19	.....	119 38	....	13 60	15 00	3 92	7 45	2 75	9 20	.....	.....	10 57	56 89	119 38	13
.....	.....	.....	69 74	....	5 80	10 00	4 51	2 75	.....	11 48	.....	2 29	8 79	24 12	69 74	14
.....	.....	.....	27 50	5 00	2 40	10 00	2 15	3 00	.....	.....	.....	.....	4 40	55	27 50	15
.....	.....	.....	227 39	....	77 57	30 65	4 47	10 27	.....	17 45	.....	26 25	.....	60 73	227 39	16
.....	.....	.....	86 00	....	2 75	25 00	4 04	1 00	1 80	5 50	.....	4 50	19 40	22 01	86 00	17
.....	35	.....	58 32	....	1 00	10 00	1 30	.....	10 10	5 00	.....	3 05	50	27 37	58 32	18
.....	.....	.....	61 17	....	9 22	20 00	2 70	4 75	.....	2 50	.....	.....	.....	22 00	61 17	19
.....	.....	.....	86 86	....	33 78	12 00	7 42	.....	3 50	7 25	.....	2 18	1 84	18 89	86 86	20
.....	.....	.....	46 65	....	6 85	10 00	2 40	1 20	4 50	4 00	.....	11 14	21	6 35	46 65	21
.....	.....	.....	61 90	....	13 45	10 00	1 50	4 90	1 20	4 31	.....	1 00	13 01	12 53	61 90	22
.....	7 85	.....	67 22	....	9 00	4 50	3 26	2 35	1 00	8 25	.....	.....	4 88	33 98	67 22	23
.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	28 35	.....	75 17	....	.....	.....	25	2 00	1 75	.....	.....	69 28	1 78	11	75 17	25
.....	.....	.....	63 50	....	13 00	.....	3 27	3 50	.....	2 00	.....	.....	19 05	22 68	63 50	26
.....	.....	.....	29 90	....	.....	.....	3 68	4 35	.....	.....	.....	3 58	.....	18 29	29 90	27
.....	.....	.....	27 49	....	15 25	.....	1 08	3 75	2 00	.....	.....	.....	.....	5 12	27 49	28
.....	.....	.....	50 84	....	6 55	.....	1 32	.....	.....	15 50	.....	6 75	.....	20 72	50 84	29
.....	40	.....	43 49	....	9 60	5 00	2 00	1 50	3 00	1 50	.....	.....	1 95	18 94	43 49	30
.....	.....	.....	68 84	....	.....	10 00	5 92	5 75	5 07	3 80	.....	25	3 25	34 80	68 84	41
.....	.....	.....	69 35	....	12 60	10 00	1 90	2 80	2 15	8 00	.....	.....	.....	31 90	69 35	32
.....	.....	.....	46 78	....	2 00	10 00	1 89	15	1 50	9 85	.....	2 50	3 85	15 04	46 78	33
.....	.....	.....	78 80	....	20 85	12 50	8 35	.....	9 85	.....	.....	.....	.....	27 25	78 80	34
.....	.....	.....	65 62	....	5 00	14 44	3 20	6 50	.....	8 00	.....	1 75	.....	26 73	65 62	35
.....	.....	.....	132 16	....	26 90	.....	22 41	8 50	1 00	10 70	6 00	.....	15 85	40 80	132 16	36
.....	50	.....	140 95	....	24 15	29 65	3 34	2 55	5 00	11 00	.....	1 15	10 24	53 87	140 95	37
.....	.....	.....	63 60	....	14 20	.....	1 60	2 75	2 50	3 00	.....	6 40	1 97	31 18	63 60	38
.....	09	.....	45 40	....	24 64	8 00	2 70	4 50	.....	.....	.....	.....	.....	5 56	45 40	39
.....	22 30	.....	41 30	....	8 25	.....	60	3 50	.....	.....	.....	1 00	50	27 45	41 30	40
.....	1 00	.....	52 59	....	15 00	10 00	2 05	2 50	5 53	.....	.....	3 60	8 09	5 82	52 59	41
.....	.....	.....	15 50	.....	.....	10 00	75	.....	.....	.....	.....	.....	50	4 25	15 50	42
.....	6 00	.....	84 97	....	2 65	10 00	2 29	4 70	.....	8 00	.....	16 25	23 75	17 33	84 97	43
.....	1 65	.....	62 27	....	7 00	10 00	2 45	1 95	.....	14 21	.....	.....	5 25	21 41	62 27	44
40 00	.....	.....	133 26	....	10 29	19 85	1 98	3 75	.....	18 40	.....	.....	74 50	4 49	133 26	45
10 20	.....	.....	75 95	....	2 85	16 00	4 79	4 00	.....	5 10	.....	30 86	.....	12 35	75 95	46
.....	.....	.....	70 45	....	37 44	10 00	1 50	4 05	...	11 95	.....	.....	.....	2 51	70 45	47
.....	75	.....	53 31	....	13 26	.....	4 05	7 00	.....	13 25	.....	.....	15 75	.....	53 31	48
.....	.....	.....	101 81	....	15 00	2 50	6 76	4 10	4 50	4 10	5 00	1 00	6 95	51 40	101 81	49
.....	.....	.....	81 75	....	31 34	.....	4 88	10 25	2 50	4 20	.....	.....	17 96	8 62	81 75	50
.....	.....	.....	55 96	3 00	13 35	.....	78	50	.....	2 85	.....	3 50	2 25	29 73	55 96	51
.....	.....	.....	34 50	....	2 70	.....	2 60	1 00	1 00	1 50	.....	6 70	.....	19 00	34 50	52
.....	3 75	.....	71 75	....	7 96	1 35	5 50	.....	8 70	32 60	.....	.....	2 95	15 69	74 75	53
.....	.....	.....	69 10	....	12 70	10 00	3 45	5 00	2 25	14 55	.....	1 00	2 00	18 15	69 10	54
.....	2 19	.....	63 66	....	20 00	5 00	11 49	1 00	4 00	2 28	.....	2 00	11 38	6 51	63 66	55
.....	.....	.....	98 09	....	9 83	19 40	6 63	.....	10 15	4 50	.....	.....	19 30	28 30	98 09	56
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Women's Institutes of Ontario

REPORT OF CONVENTION.

INTRODUCTION.

If there had been in the mind of any a doubt as to the permanency and utility of the Women's Institute movement in Ontario, attendance at the Convention in Guelph would have forever dispelled such doubt and convinced them that the Institutes are not only organized in this Province, but that they are organized for active and aggressive work.

There are many problems confronting the housekeeper and home-maker of this age, and she is showing herself ready to face them and solve them, if a solution is to be found. The lack of help in all homes of the land, but particularly so in the country home, means that new methods must be employed to lighten labor, and to accomplish the greatest results with the least expenditure of force.

The speakers at the Convention were women who had gone beneath the surface, and were there to give the ripened results of months of earnest study of the question of Household Science; the audience was in genuine sympathy with the subjects discussed, and quick to respond to the pointed utterances of each succeeding speaker. It was not only a large and representative gathering, but it was a receptive one, each delegate fully appreciating the fact that she was there to get information which would not only help her, but which she could carry home to the members of her Institute.

In December, 1902, was held the first meeting of representatives of Women's Institutes in Ontario, when sixty-six delegates, representing twenty-four Institutes, met and discussed matters pertaining to the work of the organization. When the programme was arranged, it was not known how far the women of the country would respond, but the above figures, together with the interest manifested at that time, proved conclusively that no mistake had been made in arranging for the holding of the meetings mentioned.

But, successful as was the first gathering, it seems but a small affair indeed in the light of the Convention held last winter. In December last there were 116 delegates registered, the total attendance at the different sessions ran from 250 to 350, and those present represented nearly all the counties from Lennox in the East to Elgin in the West. But the attendance was the least of it. The enthusiasm, earnestness, and business-like purpose of the delegates were the outstanding features at this Convention.

With fifty-three Institutions organized, and forty-five represented, there were about eight which failed to send delegates. This fact alone speaks for the earnestness and enthusiasm with which the women of rural Ontario have entered into this new movement.

One very pleasant feature of the Convention was the holding of the sessions in the new Macdonald Institute. Dr. Mills, President of the Ontario Agricultural College, very kindly welcomed the ladies, and expressed the wish that they would feel perfectly at home and realize that the Macdonald Institute was for the women of the country, just as the College was for the men. Owing to unforeseen and unavoidable delays the building was not as near completion as was reckoned upon when it was arranged that the meetings should be held there. However, everyone seemed to accept with good grace the situation as it was, and by so agreeably accommodating themselves to circumstances, showed their sympathy with Dr.

Mills and Superintendent Creelman, in the disappointment they felt in not having their plans fully realized.

One announcement that caused some disappointment was that owing to the aforesaid delays on the part of plumbers, carpenters, etc., the lesson and demonstrations in Domestic Science, by Miss Helen Given, of the Macdonald Institute staff, and her pupils, could not be carried out. However, the time was most acceptably taken up by the Hon. Mr. Dryden, Minister of Agriculture for Ontario, and Miss Urie Watson, lady principal of the Macdonald Institute, who both gave short addresses on the work of the Macdonald Institute.

Then a delightful surprise awaited the ladies at the close of the Wednesday afternoon session. Instead of the exhibition of class work, which had been announced on the programme, Mrs. Mills and Miss Watson arranged for an afternoon tea for the delegates, in the pretty and spacious rooms of the Macdonald Institute. The hum of conversation and merry chatter from all corners, attested the pleasure with which the ladies accepted this very kind invitation, which helped so much to make the gathering sociable and informal. It proved to be altogether one of the most pleasant hours of the Convention.

Miss Martha Van Rensselaer, of Cornell University, Ithaca, N.Y., was the principal speaker, and it would have been difficult to select a more capable and charming one. Miss Van Rensselaer has charge of the "Farmers' Wives Reading Course," in connection with Cornell University, so that she is in close touch with the needs and problems of the woman of the rural home in her own State. And, as conditions do not vary to any great extent, the problems of the rural homes of that State are largely the problems of the rural homes of the Province of Ontario. Miss Van Rensselaer's style of speaking is measured, her utterances come with precision, and she impressed her listeners with the fact that she had something worth while to say. In her address on "Woman's Work," she said many things that may have been thought out by women before, but which we have not heretofore been accustomed to hear discussed from the public platform. We are pleased to report Miss Van Rensselaer's address in full, and would suggest a careful perusal of it by every housekeeper into whose hands this report may come.

The strength which has been attained by the Women's Institutes was shown, not only in the attendance at the meetings, and the number of Institutes represented, but also by the reports presented by the delegates. The five-minute reports from the different Institutes are printed in full, and give, in most cases, a concise and brief history of each Institute from the time of organization up to the end of November, 1903.

A comparison of the different reports will reveal many interesting facts. It will be noticed that some of the Institutes which began in a very small way, with perhaps a dozen members, or even less, are now the most progressive Institutes in the Province both as to the number of members, meetings held, and the character of the work accomplished. This fact should encourage any who may be hesitating about organizing an Institute because they cannot start with a large membership. The importance of the "day of small things" has probably never been better illustrated than in the progress and development of the Women's Institute work in this Province.

In these reports will also be found the names of books and magazines which have been found helpful: also suggestions as to the expenditure of surplus funds. One Institute provides a silver badge when a member joins the second year, and also offers a prize to the "Entrance Pupil" receiving the largest number of marks in the township. Another Institute offered a prize for the best collection of baking at the Fall Fair, on the condition

that the winner should read a paper on "Baking" at a subsequent Institute meeting.

One of the speakers at the Convention, was so pleased with all she saw and heard, that on her return home she wrote the following letter to Superintendent Creelman:

"I want to take this opportunity of telling you how very much pleased I was with the meetings of the Women's Institute, and how thoroughly I enjoyed them. I had expected to do so before I went to Guelph, but in many respects my expectations were far more than realized, which is not often the case in life, is it?

"As I sat and watched the bright intelligent women before me, I could not help contrasting them with the "Farmers' wives" whom I well remember in my childhood days, dear kindly souls they were, but not the sort of women who would have taken any interest in the matters that are of vital interest to the members of the Institute. Of course all the world has moved on since the days of which I speak, but part—and a good part I fancy—of the change and improvement is due to the Institute and its work.

"Of the great value of the Institute I am more and more impressed, and that not only to the women themselves, but from a national standpoint as well, for whatever goes to improve the homes of our people is a real factor in the building up of a great nation.

"The cry 'back to the land' will become more and more a reality, I feel sure, as the homes in the country become the ideal homes that the Institute is endeavoring to foster; and, as a city dweller, I only wish that the benefits that our country sisters are enjoying could be shared by the wives and mothers here, whose home-making is too often a matter of hap-hazard."

ADDRESS OF WELCOME.

By Miss Laura Rose, Guelph.

I consider that I have the most pleasant task in connection with the Women's Institute Convention, namely, that of welcoming the ladies to the city of Guelph. I just wish I could take each one of you by the hand and call you by name, but if I cannot do that you know that my arms are large enough to encircle you and take you to my heart, and on behalf of the city of Guelph and of the Ontario Agricultural College, I extend to you a most cordial welcome. I hope that the two days you will spend here may be so pleasant that when another year rolls around—and they do roll so quickly—you will be only too glad to come back again.

Last week I was talking with a young woman, and our conversation drifted to housework. She said, "I have no desire to do housework. I think you can tell a cook just by her looks, and a farmer, too;" and then she asked the question, "Do you think that Domestic Science training will have a refining influence on this work?" I have since been thinking of that young woman, and of the idea she had of housework, and of all work, indeed, that was not merely of a mental character, and the thought has been responsible for one or two remarks that I have gathered together.

We have met together with one point in view, namely, the betterment of the home and all that that dear word implies. How is this to be accomplished? Is it not by taking a different view of the routine work that every woman, every housekeeper, and every home-maker is largely engaged in?

Ella Wheeler Wilcox says, "The world needs wise mothers, the world needs wise wives, the world needs good homes, and yet women try to be everything but domesticated." That may have been true a few years ago.

but I am glad to say a change has gradually been taking place. Heretofore housework was confined almost entirely to the ignorant classes, and as a consequence the work was thought ignoble, but in reality there are no workers that so much need the thorough training and scientific knowledge as those who are ministering to the health and comfort of man. When this work passes from the hands of the ignorant to the hands of skilled workmen, the service will be better and the pay will be more in proportion to the importance of the work, and the workers will find their proper place in society alongside of nurses, dressmakers, stenographers, etc. All honest work is honorable and all honest work is necessary. I think if there is one thing we should impress upon people it is the nobility of work. There is an immense satisfaction in knowing that we can do things and that we can do them well.

I often say from the platform that I am just as proud to be able to make a pound of good butter as to be able to play the piano. The one needs just as much skill as the other, and when we get this idea instilled into the minds of the young people—the idea of the nobility of work—we will not hear such remarks as those I have quoted as being made by that young woman last week.

At the meeting of the Experimental Union last evening, Prof. Spillman referred to the necessity of using one's brains in farm work. And it is just according to the amount of brains that we put into our work that we take our sphere in society. It is not so much muscle that is required, but muscle that is lubricated with brains, and when, as housekeepers we put more brains into our work, then we will demand and get the respect and remuneration that we should.

I remember some years ago hearing Premier Ross, then Minister of Education, when addressing the students of the Ontario Agricultural College, telling of a gentleman who held some high position, and who did his work so well that he aroused the jealousy of the chief under whom he worked. To bring disgrace to the man he was given a much inferior position, viz. that of overseer of the scavengers of the city. However, he went to work with a will and put so much skill into his new work, and made so many improvements in his department, that he was looked upon as a public benefactor and was thought more of in the new position than in the old. That is elevating one's work; not coming down to it. I often say to the girls at the Dairy School, "Do not stoop down to the floor to the pail or dish; lift it up and stand upright to the work." In all our work, both in our attitude and the feeling we have in respect to our work, let us feel that all work is noble if we bring the right mind to it. We need not let our work degrade us, no matter how servile it may appear to be.

It is very gratifying indeed to visit the different Institutes and to see how the work is developing. We listen to the well prepared papers and the discussions which follow, and realize something of the advantage it means to those taking part. There is not a branch of housework that does not come in for a share of attention, so that the inmates of our homes may be fed on more wholesome, nourishing and appetizing food, and that the clothing may not merely be a thing of beauty but may contribute to the health and comfort of the wearer.

The Women's Institute has, in three years, reached large proportions. We have now fifty-three Institutes, with a paid up membership of about 6,000 persons, while the attendance at the meetings last year was over 22,000. The people that confess to the usefulness of the work are the members themselves. Just last week a woman inspired me with hope and confidence, because of the good she could see in the Women's Institute. I can see her smiling now. As I looked at her bright face I thought, there is one woman who is getting the full benefit of the Institute. She said to me,

"I would not for anything miss the Women's Institute meetings." Another lady at the same meeting said, "I have no time to go to meetings." The latter speaker had little children at home, and felt that she could never get away. But I felt that she, of all the women in the country, should strive to attend the Women's Institute meeting. She needed to get away. If she could get away from the children for even a couple of hours and feel free of care, she would return to her duties with new light and life. That tired mother, of all people, is just the one to belong to a Woman's Institute and even if her husband had to stay that afternoon and care for the children it would be nothing but right. He can go to the town or village two and may be three times a week, but his wife can not get away even once a month, to have a rest from her regular duties.

And so, as we go around the country we see what the Institutes are doing for our women. We see how they are bringing the women forward; developing them mentally; making their homes happier and brighter, and their husbands more contented and more appreciative of their services. I do not think husbands think half enough of their wives. I have travelled about a good deal, and I have never yet found a woman who was spoiled by the flattery she received from her husband. (Applause) I think we are safe in running that risk. It will not hurt a man to get a cold tea once in a while, for you see he will enjoy a warm one all the better the next time. You see if we treat them too well all the time they might get saucy. (Laughter)

We can do things generally if we will, but the will is lacking. We have not just a strong enough desire. And that is just the point where so many country women fail, the desire is not strong enough. Their heart is not yet in the work, but they will find that when it is they will have time to get out and take the part they should in this work for the betterment of mankind.

Every time I get up before an audience I feel it a privilege to be able to impart anything I know. I know a lady who had an excellent recipe for pickle, and another lady asked her if she might have a copy of it. "Oh, yes," she said, "if you will promise me you will not give it to any one else." I felt like telling her to keep her recipe to herself. If that woman had attended Women's Institute meetings she would never have said to another woman, not to give the recipe to any one else. She would have said, pass it on, give it to any one who wants it. Oh, yes, the Institute broadens us, and takes us out of ourselves, and makes us forget the little environment in which we live, and the world seems better than it ever was before. It is those women who stay at home who see the most faults in their neighbors. The more we go about and come in contact with people, we will find these peculiarities vanish and will see good in all.

May I say to the workers gathered here this morning, get all the knowledge you can in the days we are here, store it carefully in your minds, and then when you go home impart it to the members of your Institute.

We are so glad to see you here. It thrills me with delight. I am glad to know that you come from all parts of the Province. I am glad to have met so many of you in your homes and to know you there. It is one thing to be known away from home and another thing to be known at home. The pleasing part to me is that I know so many of you in your homes, and have there learned to love you. I said to my sister last night, I wish I could break down the walls of the house, for I would like to ask every one of the women home to tea. But I cannot do that, so you will all please imagine that I have entertained you. Will you? (Smiles) The spirit is so willing in this case, and yet the accommodation is so small. Again, in the name of the city of Guelph and of the Ontario Agricultural College, I welcome you to the Women's Institute Convention.

ADDRESS.

By Dr James Mills, President of the Agricultural College, Guelph.

Ladies.—I need scarcely say "gentlemen," as there is only one present. I believe I am down for a short address in the afternoon; but owing to some hitch in our arrangements, it is better that I should make an observation or two now, and leave more time for Miss Van Rensselaer and Mrs. Cummings in the afternoon.

I unite with Miss Rose in extending a very cordial welcome to the ladies representing the Women's Institutes of this Province, from all parts of the Province. I have only one arm; and it is not like Miss Rose's, long enough to embrace you all; so I cannot do that. I am like Miss Rose, however, in that my heart is willing. (Laughter)

This gathering is the beginning of what is likely to develop into something of much importance. It is not the beginning of the Women's Institutes, but it is the first visit you have ever made to this place. You have heard a good deal about the Macdonald Institute during the past year; I presume you have pictured it to yourselves; and no doubt you now find things very different from what you imagined. I hope that if you are spared to come here next year or the year after, we shall be able to present you a picture that will interest you; and we think that the day is not far distant when you will begin to look on this place as a sort of Mecca for the women of Ontario, as the Ontario Agricultural College is now looked upon by the men; for there are large numbers of men who come here year after year, many of them bringing their families with them, in the hope of being able to pick up something that will be of interest or advantage to them. Even if they do not learn anything new, they have an opportunity of meeting old friends, and of becoming acquainted with the men of the College. The visits of so many farmers year after year has been immensely helpful to us and to them. It has increased the interest in farming and has, I think, elevated the occupation. Our College both directly and indirectly has contributed to the elevation of the farming community. It has awakened many farmers, so to speak, and has done something to improve their methods, and to give them a clearer conception of the importance and dignity of their occupation.

Now, I think this particular department of the College can do the same thing for the women of the country. I have great hopes for the Macdonald Institute, because of its aims and objects. I look on the home as the foundation of the community. It is essentially so—religiously, morally, socially, aesthetically, economically, and every other way: and the most important factor in the home is the woman who has charge of it. There is no doubt about that. Good homes—well regulated, refined, God-fearing homes—mean a high type of boys and girls in this country; boys and girls who will be a power for good wherever they go. Neglected homes—neglected from whatever cause—will produce the very opposite fruits. You all know that the hope of our country is in the home. I am not saying this to you because you are women; but because we all know it to be true. No one else in the home has the same influence over the boys and girls as the mother has. Hence if we can elevate the mothers we shall do the best possible thing for the State. Our aim in this Institution is to do something, if possible, to lessen the burdens, increase the comforts, and add to the happiness and brightness of the homes of this Province. And we aim at improving not only the farm homes, but also the homes in the towns and cities of this fair country.

Further, I may say that the benefits of this Institution will not be confined to the homes of the Province of Ontario, because Sir Wm. Macdonald—

that generous man who has made this thing possible for us—has distinctly stated that it is for the Dominion of Canada. And just here I wish to say that nothing else arouses my indignation so quickly as to hear sneering remarks from miserly people about a man who has given of his wealth in this way. Some people are mean enough to say, "He has plenty of money; he might as well put some of it here as anywhere else, and it is a good advertisement for him." All the contempt and scorn within me rises when I hear such a remark. I would be glad to know of others who are willing to advertise themselves in this way; and when a man makes a generous gift of this kind let no one be so utterly contemptible as to disparage or belittle his generosity.

Sir William Macdonald placed $175,000 in my hands, with only three conditions as to the expenditure thereof, namely:

1. That the money be wisely and economically spent for the purpose for which it was given.

2. That you, (Dr. Mills), be responsible for the plans and see that they are adapted for the objects aimed at.

3. That you keep all cheques, vouchers, etc. arranged on file for reference at all times.

That is all Sir William said; and I have had this $175,000 at my disposal for a year and a half in order to give concrete expression to his beneficient purposes.

In order to raise our young men should we not do what we can to instruct on practical lines and elevate the young woman, the home-makers of the country? I feel that we must do something to lessen the burdens, increase the comforts and add to the brightness and happiness of Canadian homes; and this can be most speedily and effectually done by the proper education of our girls. We have good educational institutions in this Province, public schools, high schools, ladies' colleges, and universities—all doing good work, but none of them proceeding on exactly the same lines and on such a scale as we propose at the Macdonald Institute; and it is to be borne in mind that this Institution is intended for young women from every part of Canada, the terms of admission, the fees, etc. being the same for all, whether from Halifax or the city of Guelph. The spirit is as broad as the gift is generous.

The room in which we have gathered this morning is the Assembly Hall. This will be the woman's room in Guelph, and this is where we will expect you to come. The staff here will always welcome you, just as we in the College have welcomed the farmers of the country. We are like Miss Rose in her spirit of hospitality. We would like to do a great deal more than we do. We want to make everyone feel perfectly at home here. This is a smaller hall than we would like to have; but it is large enough for ordinary meetings, accommodating about four hundred people; and when your annual gatherings become too large for it we will go over to the College Gymnasium. Next year you will see a great change. The buildings will be finished. We hope to have stained glass windows on the stairway, in one of which we will have the coat of arms of Sir William Macdonald. I had considerable difficulty in getting Sir William to consent to this, but have at last persuaded him to comply with our wishes regarding the matter.

I may say that I named the buildings Macdonald Institute and Macdonald Hall, without Sir William's consent. He proposed other names; but I thought it only fair that a man who had given so liberally should have his name directly associated with these splendid buildings.

This Institute building will be very substantial when it is completed. The wing just below will be devoted to domestic science, domestic economy, household science, or whatever you wish to call it. (Miss Van Rensselaer:

"At Cornell University we say 'Home Economics,' as we like the word home in it." We have used the name "Home Economics" in our first announcement; and we are glad to know that Cornell can be quoted as using it.

We have two fairly well equipped rooms which we call kitchens or laboratories. The work in these will be in charge of teachers who will guide the pupils in their work, by necessary comments and corrections, with a view to making the course methodical, scientific and practical.

Another room we call the practice-room. In it the students will work, after having had a certain amount of training in the kitchens. In this room there are four tables, at which sixteen girls can work—and will have to work largely on their own responsibility. There will also be the setting of tables in a small dining room attached; and this will probably be the limit of the work we shall cover this winter.

When the girls have done the work required of them in the kitchen and practice-room, they will be sent, two at a time, to the opposite wing, to take charge of a suite of rooms, consisting of a kitchen, a dining room (which will also be used as a living room), a small bath room, and two moderate-sized bed rooms. These two girls will be expected to take entire charge of this wing for a week or ten days; one being the housekeeper and the other the assistant. The housekeeper will have to go to Guelph and buy the food, etc., assuming full responsibility and using her own judgment. She will as a woman in a well-regulated and economically managed home would do. What she does there will be the proof of what she learned in the kitchen then cook the food, set the table, serve the meals, and take care of the house, and practice-room. If she uses good judgment in buying, and gives four wholesome, palatable meals for twenty-five cents, she will be considered a success. Don't you think she should? You know it is comparatively easy to keep house and make a fair show when you have nice homes, with good carpets, beautiful furniture, and plenty of everything to cook; but when you go into a house with bare floors, a table, a cook stove, and a few chairs, you will need much greater skill, economy and patience. It is not every woman who can make a neat, comfortable and attractive home under such conditions.

Now, in this wing, of which I have spoken, the girl on duty will take full charge; and the Lady Principal and one of the teachers will occupy the rooms, board there, and report from week to week. When the first girl's time is up, the girl who was her assistant will take charge for a similar period, with another girl to assist.

We have a fine room for Nature Study, to train teachers and others who want instruction and practical training on that line; a room for manual training of teachers and others; also good rooms for sewing, dressmaking, millinery and laundry work.

I do not know how it is with the ladies I am addressing; but I know that we of the College have the greatest difficulty in getting women who know anything about laundry work, and especially about the handling of laundry machinery; and this is a matter of some importance; for there are few things that annoy one more than to have clothes spoiled in the laundry—bad washing, bad starching, bad ironing—everything about it bad, and the clothes ruined and unfit for use; so if we can teach our girls to do good laundry work, we will do something to save money, increase comfort and remove causes of annoyance in Canadian homes. If you know all about how washing, rinsing, starching and ironing should be done, you can take a very commonplace girl and train her in a few weeks. If not you will have endless trouble and most unsatisfactory results. If it is possible we are going to teach our girls the art of caring for clothes—even flannels. It is not safe to have

your flannels washed in the ordinary laundry. You know how it is – they go in two feet long and they come out one foot. (Laughter) I think all these things go to show that we are moving in the right direction.

We speak of cooking, laundry work, and general housekeeping as "Domestic Science"; and dressmaking, general sewing, millinery and home decoration, as "Domestic Art." I suppose this is because the scientific side is the more prominent in the former, and the artistic side in the latter. Nevertheless, there is both science and art in cooking, laundry work and general housekeeping; and both have to be considered in dressmaking, sewing, millinery, and home decoration; but probably the artistic is more prominent in this division than in what is covered by the words "Domestic Science"; and we are, I believe, justified in naming a thing from its chief function, whether it be the artistic or the scientific.

We have arranged a two-year course in Domestic Science and Domestic Art, for teachers. Then, we have a course for young women who do not intend to teach, but who wish to fit themselves for work in the home. This is also two years; one in Domestic Science and the other in Domestic Art. We realize that young women cannot look for positions either in the home or elsewhere, where their whole time will be devoted to Domestic Science or their whole time to Domestic Art; consequently we have arranged the course so that they will take both the first year, and specialize, taking Domestic Science or Domestic Art the second year.

In addition to the courses already mentioned, we have a three months' course of a more practical nature; in fact it is largely practical. There are three of these courses in the year.

I am glad I can say truthfully that the farming community is on the upgrade—men and women, boys and girls, as a whole. The farmers are in a much better position than they were fifteen years ago. I have been at the Agricultural College something over twenty-four years; and no man in the Dominion has seen more farmers than I have during that time. We had about forty thousand farmers visit the College last June. I have met them; I know something of their conditions for the last twenty-four years; and I do not hesitate to say that they are in a much better position than they were even fifteen years ago. They have more of the comforts of life than they had in the days gone by; they dress better; they live better; they look better.

The public and high schools of the country have been important factors in adding to the intelligence and prosperity of our people—farmers and others; and may I not justly claim that the Ontario Agricultural College, the Farmers' Institutes and the Women's Institutes, have had a share in this great work? We all need stirring up to observe, read and think. This is the secret of success, ladies, in the home or wherever you may be. *Observe;* open your eyes and see, wherever you are or wherever you go. *Read*; great men and great women everywhere are great readers; the home without reading matter will be a barren home intellectually. Then, *think* over what you read. We must look up and out for the inspiration that is uplifting.

ADDRESS.

By Hon. John Dryden, Minister of Agriculture for Ontario.

Perhaps I am the proudest man in Guelph at this moment. And why should I say that? Because I had something to do with the organization of Women's Institutes in Ontario, and it affords me very great pleasure at this time to address so many representatives of that organization from different parts of the Province.

I remember well when we discussed the matter of the organization of Women's Institutes over and over again, and I remember how I urged Mr. F. W. Hodson—then Superintendent of Farmers' Institutes—to see if something could not be done to effect an immediate organization, but I did not expect the work would have spread so rapidly over the Province. The representatives who are here to-day indicate something of the influence of the Women's Institutes in this country.

I noticed in a newspaper recently the question, "How shall we keep the boys on the farm?" If I were answering that question I would say, "Keep the girls on the farm and the boys will stay there too." If any person asked me how to further the work of the Farmers' Institute in their section, my answer would be to organize a Women's Institute. That is the best way, and when you find the women going out to Institute meetings the men will follow sure. I know what I am saying, because I have seen the influence of the Women's Institute in my county. I have seen men who never went to an Institute meeting before, turn out to one when their wives led the way. And so you are not only doing good work among the women of the Province, but are doing work which is much needed among the men also. I think if I were writing a book—I do not expect to—the subject of it would be, "The Power and Influence of Home." Now you go into Chicago, New York, Boston, Toronto, Montreal, and go in and out among the leading men of business, and you will find among them a great many Scotchmen. I never could tell exactly why that should be. Is it because they are so superior naturally in intelligence? Well, there may be something in that, I will not take away anything that belongs to them, but I have been in Scotland a good many times and have observed the home life in that country, and have no hesitation in saying that a great deal of the influence that Scotchmen exert in this country is due to the Scotch home life. I do not know why there is no other country in the world where the home has such an influence over every member of the family as in Scotland.

Now, you cannot have a home in its truest and highest sense—I do not think you can—without a woman. I was telephoning a young lady the other day, and we mentioned a certain young man and his father who did not get along just as well as they might. "You know," she said, "God never meant that men should live alone without a woman." And so it seems to be, and instead of hunting up another young man for a companion we look around for some nice-looking girl and make a home together. That is as it should be. I believe that is God's way. When he formed Adam, then he formed Eve to help him. So you cannot have a proper home according to God's plan without woman. But when we begin to speak about home life there is so much to be said, and there is so much need of education; just the kind of education that the Women's Institutes are giving to develop the best home life.

One thing to be considered in the home is the health of those who make up the family. Now this is more important than it may seem. I sometimes say to the professors at the University, you are training these young men's minds until they break down with nervous prostration, before they realize that they have a body which must be cared for. Here is a lady (Miss Van Rensselaer) telling you how to preserve your health, and it is one of the things which must be attended to.

Now, health will include not only physical culture, but the sanitation of the home. Oh, how many homes I have been in! (We public men get into places where you do not have the opportunity of going, for people live there who have votes and so we have to go.) (Smiles) In so many of these homes there is needed better sanitation; better ventilation. I do not under-

stand how it has come to pass that so many people will build their sleeping room off the kitchen, so that all the gas and odor from the cooking may gather there. Perhaps it is done so that the sleeping apartment may be convenient to the kitchen stove. But if someone at the Institute meeting had taught these people something of sanitation and health they would never have built their home in that way.

Then, of course, home life includes the preparation of food. Some of the people in the country think that the Women's Institute has nothing to do with anything else but cooking. That is because you have been bringing that branch of Domestic Science prominently before the people, and so outsiders naturally connect the Institute with the idea of cooking. But there are a great many people in the homes I have referred to that I would not find a bit of fault with in that respect. If you once tasted their raspberry or pumpkin pie, you would be sure to want to visit the place again. Even if there was not a person in the home who had a vote one might be tempted to go back, for the roast beef and potatoes were also all right, but the trouble was that the mother in that home had become one-sided; she had learned to cook but had forgotten all else. You look around the home and there is little evidence of culture, taste, education, papers, music—none of these things. It was all right so far as the cooking branch of the home-making was concerned, but that woman needed some education along the lines mentioned, so as to make her home as perfect as it might be.

We need pure food, air and water if we are to maintain the health of the family, but the mind must not be neglected. I want to know something of the literature that comes into my home. You cannot have the best home life without some of the best literature of the day, or some good music. It does not need to be fancy music, although that may be all right in its place—but simple, sweet, uplifting music, and such may be had in almost every home. If there are a number in the family it is astonishing how much pleasure can be found in the cultivation of music.

Do not forget the morality of the home. There is where the Scotch mother comes in; there is where the Calvinist comes in. He has not gone astray in his moral character at all. He won't budge though the whole city moves. He is established and knows his ground and keeps it.

What are the ideals in your home? I would put character as the foremost ideal if I were starting a home again myself. The character of the children of your home is the main thing. Though they may not be scholarly, they can be true and honorable. A boy who has been brought up in a home where there is a pure-minded, godly mother, even though he tries I do not believe he can become a bad man. And so though the young man who has been brought up in a home where the atmosphere is of that character may want to be great, yet I venture to say he will want to be good first. Then his usefulness would be assured. And then such men usually have a proper public spirit. How I do dislike those men who say, "I know how to feed that animal so as to get the very highest price, but do you think I am going to tell Jim Jones? Not much." I feel like saying to such a man, "You ought to be ashamed of yourself, and I will not help you. I'd drive you out of the country if I had my way. Do you not realize that two men can sell their products for more than one, and thus by helping your neighbor you help yourself?" And it is just so with the woman in the home; you cannot help my home and my daughter without helping yourself. You cannot help the community generally without helping yourself. Hence, I would want one of the ideals of home life to be a proper public spirit.

The work which you have on hand in connection with the Women's Institute is a very noble work, and as long as I am Minister of Agriculture I would like to help all I can. How can I help? Just in this way, by help-

ing you to help yourselves. If you have any suggestions do not hesitate to speak to me or to write me. I am not so uppish that I would not listen to it. I am only too glad to do anything in my power to help along both the men and women of the rural districts of Ontario.

Think of the formation of the first Women's Institute, so short a time since, and then think of how many we have to-day, and think of the tremendous influence they are exerting. I tell you the ladies of the Women's Institutes will move the Legislature of this country yet and you won't know how it has been done. It is a good work and I commend you for being interested in it.

It is a great inspiration to stand before an audience like this. I am glad to have been here, and some other time, when I have an opportunity, I will take time to think out a greater subject and give it to you. I want to help you, because I think it is the noblest work we have in hand in the country at the present time.

WOMAN'S WORK.

By Miss Martha Van Rensselaer, Cornell University, Ithaca, N.Y.

Women are not asking for less work to do, but how they can do more work, and still maintain health and strength. Women, as a rule, are constantly realizing the fact that they are not strong enough for the work which they have before them and which they wish to do.

I believe we can do a great deal more work if we worry less and rest more. The trouble is not that we are working too hard; the trouble is that we worry so much and rest so little we do not live normally. We hear it said that girls at school are over-worked. At the same time if they did not have social interests besides, they might be able to do their school work well. If they knew how to rest; if they had proper food; if they were not anxious for society at so young an age; possibly the work which is presented in the schools would not seem so great. It is said, that as Americans do not know how to rest, I have suspected that you as Canadians know how to take care of yourselves better, possibly, than we in the United States. I have been led to suppose that you live more normally; that you take time for things that people ought to take time for; that you think of hospitality; that you are not in too much of a hurry to treat people well. Much as we would like to be considerate of others, we get into the rush of life and forget some of the civilities and amenities that would do us good to practice.

You have probably heard what the German physician said after studying the faces of Americans. He studied one face after another and finally said: "Those Americans have some terrible disease; it is written in their faces; it is Americanitis."

The days are too short for the work we have to do. We go to bed so tired and worn out that we dread the relaxation of sleep. No matter how tired we are we force ourselves to go on with our work and the excitement carries us through. An exaggerated picture, you say? But have you never experienced anything of the kind?

I said that I did not believe we needed less work so much as more rest and better methods. Of course it would not always apply in individual cases. We would certainly do more efficient work under these conditions. We want our present work done better, rather than more work done superficially. We would be much more efficient if we took vacations occasionally. Our day's work would be better if we had a night's sleep of more hours' duration.

But let us see how we do sleep. Custom makes us go to bed at a certain hour, and if uninterrupted we follow that custom—and we carry our cares

to bed with us. We think about them. We have time then to think. It is a mercy for us sometimes that we are so busy during the day that we have not time to think of our anxieties. But when we get to bed we go over all the things that bother us and we find ourselves in a tense position, our hands clasped tightly, and trying to hold the bed, rather than allow the bed to hold us. If we would just give ourselves up after a hard day's work, and measure our length on the bed and realize that it is to rest us, and feel that we weigh a ton rather than fret and worry over matters of the day; if we would relax body and mind, it would be so much better for us.

How many men are rushed in business and are wearing themselves out early in life! It is a matter of which men will have to think more seriously, even as women are thinking of it more seriously. They feel the strain of competition, but they are unselfish and want to provide for their wives and daughters so that they may appreciate their work and the positions to which they attain, but perhaps they do not always take just the proper care of them.

You have heard of people who go to bed only to toss and turn and finally get up, light the lamp and read for a time rather than lie and worry any longer. Surely this is not a normal condition of living.

We have very bad habits. If you are going to the dentist's, how do you feel about it? Do you not get more worried and suffer more before the dentist begins his work than when he is actually working at your teeth—if we might except the pulling of teeth or some strenuous work? Are you to take a train? How hard do you work in the waiting?

Did you ever sit in a street car and watch any one literally pushing the floor of the car? It is the same thing as driving a slow horse; when you push on the lines, and use other "suasion" than "moral suasion." "A good, safe horse for a woman" is about as wearing to the nerves as anything can be. I refer to the horse that you push. Who is tired when you get to the top of the hill? It is not the horse. He goes into the stable and is prepared to eat his oats in comfort, but you have had a very hard time. A "man's horse" will go straight ahead and will give life to the driver.

How do we go to church or to a reception? We put on our good clothes—and that is taxing—and then wonder what people will think about our good clothes, and that is exceedingly taxing. We walk up the aisle and take our place in the audience. We grasp the book tightly in the hand and lean forward and try to listen. The text is given out, we try to remember what the text is; the minister begins his sermon and we begin to think about something else. We are not in a fit state to listen. If we could only learn that we need not be worried about the minister or the singers, they will do their part, if we will seat ourselves comfortably and listen, allowing the thoughts and impressions to come to us, we should not be so fatigued.

Some people say they cannot drink coffee at an evening reception, and yet the same people will drink it during the day. I do not consider that the coffee is altogether to blame for the sleepless night which follows. It is due partly to the nervous strain. I stood with a number of women a few days ago, attending an afternoon reception. I suppose all felt the strain of the occasion. Several of us held a cup of coffee, as we stood chatting. One woman said, "I know I should not drink this," and another said the same. I noticed that every one was holding her own hands tightly. We felt the strain. That is the reason, I suppose, that we do not know what to do with our hands when we get up to speak; first we hold them in front and then behind us. We lack composure. It is the nervous strain and the excitement of the occasion—at least in part—that make it difficult for us to sleep. Relax, and say, "The reception is not so bad," and then take it as it comes; "never mind if I do make some blunders; let the world have a chance to laugh at my expense and take it in an easy sort of way." We would get along much better.

The very same thing applies to the teacher. She is not so much worn out by the actual work she does in the school room, as by the nervous energy expended and the anxiety which comes from trying to push her pupils through their course of study. The child gets up to recite and she is afraid he will not do well, and she really works harder than the pupil does.

Watch the student at an examination. Some sit quietly and without concern, and of such you feel that they do not spend much time on their studies and probably will not even pass in their examination. But some frail girl shows that she has been up part of the night; she is nervous, and shows every sign of hard work, and the teacher says, "She will get through all right, she is a hard worker." But is this true? Is it not rather the student who succeeds who is without the nervous strain and exhaustion, and who says, "Never mind, I'll get through all right; but if I do not, it can't be helped, I've done my best."

Showing proper and improper method of placing washtub.

Look at that woman in the home, about eleven o'clock in the morning. she knows that dinner must be ready for several persons by noon, and she is a little behind in her work, although she has been working hard all the morning. She puts on the screws a little tighter and a little tighter, and bye and bye the dinner is served. But something is spoiled in the cooking and a thoughtless man makes a remark. Is it any wonder she wants to sit down and cry? But she must not do that. No, she must be the queen of that home, and pass things off saying to herself that she will have it better next time. It is just at that time in the morning, eleven o'clock, that she needs to have an easy chair in her kitchen. Five minutes' rest at that time will save a catostrophe at dinner time. It will take the tension off the body and will save endless trouble.

You have risen to speak, say to yourself, "I have prepared myself as well as I can, and perhaps I will fail, but never mind." It is not a good thing to say failure to yourself. Do not entertain the thought that you

will fail. Do not feel that the forenoon's work is to be a failure in any respect. But if you find yourself weak and worrying, and getting up more tension than you should have, then is the time to find a rocking chair or a couch and relax every muscle in the body and give up. It will not hurt anybody if they should catch you resting. Did you ever see a woman lie down to rest for a few minutes in the forenoon, and then jump up in great agitation if she heard a footstep? Did you ever see a woman pick up a book, but if the children or some one else should come along the book was thrown aside and she rushed off to work? Oh, we will learn to rest some day, and not put the screws on so tight. We will learn to drive everything out of our minds when we lie down to rest.

When do we get cross? Is it not when we are tired out? We have over-taxed ourselves; there is too much tension; we are nervous and unstrung, and that is just the time when we want to express our minds about things. But it is just the time when we should not say anything. Rather, we should relax, and say, "Never mind, let it go." I believe we can get into that state of mind by relaxing physically. I have hinted a little at the proper attitude of the body when we want to rest. You can feel that your hands are like lead; you can raise and drop them like lead. What we are doing all the time is hanging on to ourselves; a very unfortunate thing to do. But if we will learn physically to "let go" we will find that the effect on our minds will be to let the worries go too.

When you lie down to rest be sure that the whole body is touching the bed, as far as possible. It is a good thing to stretch, it is a good thing to yawn, it is a splendid thing to laugh. You may say that yawning is a bad habit, but it is not. I wish you would try it. You can practice this in your own homes. You will find that when you have yawned a few times the tension will leave your throat. Take notice of a cat or dog. If it does not take a good yawn and stretch it is not living normally. When you lie down, stretch the feet as far as they will reach; push out your toes, and then push out your arms and fingers. This is a splendid thing for indigestion. When you have done this I would suggest that you let the head and heels and elbows rest on the bed and raise the body. This will relieve you of indigestion as quickly as any exercise I know of. Try it two or three times in the morning. As it is a strain on the muscles do not try it too much at first. Try the stretching exercise in the morning. You will find it strengthens the muscles wonderfully.

I would like to speak now of some of the physical attitudes we have to assume in doing our house work. The athlete keeps up his exercise from day to day to keep up his strength; but the woman complains of the exercise because it makes her weaker. The athlete knows how to use his muscles. Does the woman? I heard a man say the other day, "A woman does not know how to use a spade," and I thought "yes, there are many things that a woman does not know how to do." Why should not a woman wash clothes over the wash tub as easily as a man saws wood? What is the difference? A man uses his arms for his work, while a woman uses her back. Of course exercise of that kind wears her out, and that is the reason she becomes so tired and cannot look beyond the wash tub to something brighter.

I know it is easier for a boy to play foot ball than to saw wood, and so I suppose it is easier for a girl to go to the gymnasium than to wash clothes, but we have to do the latter and why not learn to do it in the right way, just as the trained girl does in the gymnasium? In order to stand properly the weight of the body must be on the balls of the feet, and not on the heels. As the house-keeper stands at the sink or table several hours in the day, it is a good exercise to raise the body on the balls of the feet every once in a while just to find out where the weight is. The back must be saved and the

limbs should be able to bear the physical strain. If the weight is thrown forward, you will have a line from the chin to the chest, and straight down to the balls of the feet. Otherwise, you are out of position. You can easily tell as you stand, whether you have the weight correctly placed by swaying backward and forward on the heels and toes.

Someone has said that when we build a house we put the most artistic part to the front—the drawing-room, reception-room and hall, while the kitchen, or place for doing the work is in the rear of the dwelling, but American women reverse this in the matter of poise of the bodily dwelling and put the kitchens forward. This of course refers to the digestive organs being prominent, while the chest is sunken and undeveloped. Remember to keep your kitchen in the rear and put your drawing-room forward. In other words, "chests up!" The woman who will keep her head and body up physically will be lifted up in her thought. Her attitude toward life will be better. So much for the way we stand; now just a word as to the matter of lifting.

(a)

(b)

Illustrating how to stand properly (a); also improperly (b).

I believe that men know how to lift better than women do. When a man lifts he uses his arms, while a woman invariably uses her back. You can readily see that this is a mistake, for the vital organs of the body may be injured, but there are no vital organs in the arms. When you lift a child, do it with your arms, and the same when you are lifting a tub. If it is ever necessary for you to carry a suit case, carry it with your arm and not with the body. I often wonder how a man would get along if he had to carry a grip, or parcel, and an umbrella, hold up a long skirt, get off a car and put up an umbrella, all at the same time. Never refuse an offer of help from a man when he wants to carry something for you.

Then, we have to reach to those pegs that the carpenter has put just beyond our reach! When you are having shelves put up, or hooks placed

on the wall, have them put where you can reach them. Perhaps you ask the carpenter to put them a little lower, but he says, "No, that is where we always put them." Do not be put off in that way, but tell him that those pegs are for you to use and you want them within your reach. Reaching is a very difficult thing. When reaching to a peg allow the whole body to go with the arm.

Another thing that we have to do in the home is to pick up things. There are two ways of picking up things off the floor. Do not make the mistake of crouching down and doubling up the whole body, but bend the knees, keeping the body erect.

There are many conditions in the home which may be improved to help us to do our work more easily. Did you ever see a kitchen sink that was too low? A woman told me a short time ago that when they were building their home, she told the plumber the sink was too low. "That is the way

(a) (b)

Correct (a) and incorrect (b) method of picking up articles from floor.

we always put in a sink," said the man. "It makes no difference," she replied, "I want it higher." He then said, "I was told to put it in just this way: your husband said I was to do it so." But the little woman was bound to have things convenient and comfortable, so she said to the man, "You may put it in just as I say, or go, for I am the one who has to wash the dishes and do the work at that sink." And I suppose plumbers and carpenters will have to follow their rules for a time until the women of the home take hold of the plans and give them attention. True, it may be hard to change the sink for every passing maid, but surely a man may at least have a sink of the proper height for every wife! A woman has no right to spend her time washing dishes at a sink that is too low, so that she has to stoop to do it. She is tired out all the time. Make conditions right in the home and things will look a little brighter. If you cannot get the sink

raised, put a block under the dish pan and raise it thus. I suppose our stoves are usually too low; so that we have to bend over them. This is a matter which might also be remedied. We should, in short, save time, save strength, save steps, just as much as possible in order to do more work, or in order to do the work we have to do with greater ease.

Our houses are sometimes built with large kitchens, and we have to travel unnecessarily when doing our work. Study constantly to see how you can save the amount of travel in a house. I have sometimes thought that if men had to do the work in kitchens they would be more convenient. I do not believe men would put up with the many inconveniences that women do.

Plan in every way possible to have your kitchen utensils arranged conveniently. Brains in woman's work apply just as much as brains in man's work.

Correct and incorrect position when sitting.

I have spoken in regard to woman's work in the home this afternoon, because we found in the work among the farmers' wives in New York State that this was one of the first things they wanted to know more about. I believe we have had eleven lessons in the Farmers' Wives Reading Course, and that the one on "Saving Steps" has elicited more sympathy than any other lesson. This shows the condition and the need to learn how to save steps.

I would like to read you a few extracts from letters which we have received from farmers' wives in connection with our correspondence course.

One woman says: "I am teaching my children to do housework. They wash some of the dishes, sweep their own room and help to get the meals, etc." Getting the children to help is an excellent way for the mother in the home to save her steps. Not only is it a benefit to her, but also to the children.

Another says: "I am a farmer's wife and am not doing my own work because I failed to count my steps and so lost my health. This means also the loss of time and money.

Still another writes: "My greatest trouble comes from want of thought; I cannot use my brains to save my feet. Executive ability is one of the strongholds of the kitchen. Without it the housewife may rush here and there and accomplish very little except to work herself into a nervous heat. A few minutes' quiet thinking and planning of one's work, will make things run smoothly and the work will be done as if by magic."

The next one says: "I do not think I was brought up to save steps, but to take as many as I could. I think I have learned by experience that one can save a great many steps if they try. We cannot all have things as convenient about the house, especially the kitchen, as we would like. I know

Illustrating desirable and undesirable position of pan for washing dishes.

of one person who kept most of her utensils in the pantry, and that was on the other side of the dining room. Surely such an arrangement as that is not necessary. Study to have things convenient for your work, and you will find yourself wonderfully repaid."

But you are not the kind of farmers' wives who are satisfied to have things go along indifferently. The fact that you are here at this Convention indicates that you have given thought to these matters, and so I have not given this talk to teach you, but because I know you are mingling with a great many other women, and if you can give them any hints that will help them to save their health and make their burdens lighter, you will be doing a great deal.

I wish I could tell you what I think. I am proud of the enterprise you have shown. I do not care if it is across the line. I do not care if it

is not New York State. You are women and we are women, all working along the same lines, that of home-making, home-building, and the making of better homes for the men and the children and for ourselves. You have here what so many of us in our country wish we had. We have Cornell University, and yet we have not nearly the start in Domestic Science and Manual Training that you have, and there is not a college in the State of New York that is doing to-day what you have the opportunity of doing here. It means so much. We talk about the servant question. I do not know how to solve it, but I know there is one thing we should do, and that is to dignify housework and labor. We should make a girl proud to be able to do housework. She should put culture in the kitchen. I would much rather she should learn to play the piano and read Shakespeare than that she should simply know how to wash dishes without culture; when we put them side by side there is a bright outlook.

I shall expect to hear great things of the Women's Institutes of Ontario, and of the Macdonald Institute. I like the Institute not only because it will help the girls who come here, but because it will help the homes throughout the country. I like it because you are making it yours, and one of the best signs I see is the fact that you have come here and that you have a part ownership in it. It is for yourselves and for your girls, and you will take such an interest in it, that it is sure to succeed and the work and life of the home will become a science and an art. I am glad for the girls of this country that they have the opportunity of learning to make home life an art, and of helping to make people know how to live.

THE WORK OF THE NATIONAL COUNCIL OF WOMEN.

By Mrs. Willoughby Cummings, Toronto.

In the first place I want to say what a great privilege I feel it is to be able to come here and speak to you of work in which you are just as much concerned as I am, because you are "partners in the concern." In the next place I want to express a great feeling of thankfulness that we are meeting in the Macdonald Institute. You know some of us have been working a great many years in the interests of the study of home-making. We have always felt that while women are, of course, extremely clever, still we are not so phenomenally clever that we can know things by instinct. We have felt that the mothers in the home were not able to learn everything they ought to know without any special training, and that there is an immense amount of room for improvement in ideals and methods of home life and work.

In the beginning of our work to secure for our girls scientific teaching in Household Science, we had cold water thrown over us in buckets full, until we were nearly drowned, but when a woman makes up her mind to do a thing she usually sticks at it until she gains her point. And we got more than we expected to get in securing this beautiful building and magnificent equipment. My only regret now is that I was born too soon, so that I may not now personally share the benefits of the Institution. However, we have much to be thankful for and some of us have daughters that we hope may enjoy the privileges we have been denied.

I want to talk to you briefly for a few minutes on the work of the National Council of Women, of which you are a part. At the time of the World's Fair in Chicago there was, as you know, a series of Congresses held. The first one was a Woman's Congress, and at that Congress every department of woman's work was taken up by the delegates from almost every country

Joint Annual Meeting of South Bruce Farmers' and Women's Institutes on farm of Mr. W. D. Cargill, Cargill P.O.

in the world, who told us how these lines of work were being carried on with them. At the close of the Congress it was felt that it would be a great misfortune if all that the coming together of these women had meant was to be allowed to pass away, and so a meeting was held at the Palmer House, at which there were representatives from twenty nations. All these representatives of these twenty nations spoke English and understood it thoroughly. It was at that meeting that Mrs. Mary Wright Sewell outlined this "Council idea," that is, that in every country was to be formed a National Council, to be made up of the confederation of existing societies; not to organize *new* societies, but simply to draw together the women representing different interests, different churches and different organizations and societies, to work together for the common good. Some people thought this very visionary and that it would not be possible. That was only eleven years ago, and I am thankful to say that at this moment there are now nineteen National Councils actively at work.

It seems to me that in the organizing of this work God has some wonderful object in view. It must be God's work or it would not have taken such root and gone on so successfully, because there has been so little effort on our part and on the part of the International officers to form these National Councils.

The women of Great Britain, Germany, France, Sweden, Switzerland, Argentine, the United States, Australia, and in fact nineteen nations, are organized and at work just as much as we are in Canada.

The representatives of Canada who were at that Congress in Chicago came back to Canada, and promised that we would do our best to organize a National Council in Canada, but this seemed to be almost impossible at first. It was due in a measure to the fact that there were very few Canadian women at the Chicago Congress, and so our women did not understand the situation. However, Lady Aberdeen was with us at that time and was intensely interested in the matter. She consented to become our first President, and to her and to her untiring work we owe more than I can begin to tell you.

To pass briefly on I may say that we are now thorougly organized in Canada from the Atlantic to the Pacific. Besides Local Councils, made up of the various local societies in cities and towns, we have nine or ten large associations like your own, which are affiliated with the National Council. We have the French Canadians, the English Canadians, Jews, Roman Catholics, and all bodies of Christians with us, all working together for the first time for the common good.

The lines of work we take up are as varied as our country. The Local Councils take up any work in their locality that is specially needed, and the National Council works for more general needs. And so, therefore, when the women of the country have become banded together it is no wonder that we have been able to bring about reforms and call attention to matters which no single society no matter how strong could ever have done alone.

You know in the beginning of women's organized work the first societies were those in connection with the churches. A little later it was found that women who did not work alike, and did not see alike on all matters, could join together for *one* object, and so the next step in organization was the formation of societies like the Woman's Christian Temperance Union, The King's Daughters, and others. The organization of the National Council of Women is just a step further on, in drawing all these societies together, so that we may all work for the common good.

If I were to begin to tell you what has been done already, it would take a long time, but I may mention some things we have been able to accomplish. One of them has been the suppression of pernicious literatur These

horrible letters and papers were—and are still too often—sent under cover to our homes to our children. We found there was a regular tariff being carried on in the names and addresses of boys and girls. We were able to put mothers on their guard in reference to this matter, and in Toronto we got out a little letter and circulated four thousand copies among the mothers of the city, putting them on their guard concerning a matter that many of them knew nothing about.

And then we found that though the Government prohibited the circulation of certain papers, they were still sold. On looking into the matter we found that it was the *public* sale that was prohibited, and so they were sold in back shops and in such places that would not come under the law. By working hard we were able to get the law changed in this respect.

Another thing that we found out was that women and girls who worked in shops did not have the same protection necessary for health and morals as the girls in factories, and we were able to get the Shop Girls' Act passed in Ontario.

In some of the smaller Councils, by these societies joining together, they have been able to establish small hospitals, to secure the enactment of by-laws to prohibit expectoration on the streets, and many other good things, that one society alone, no matter how influential, could never have done, especially in the North-West. We have been able to get women appointed to visit jails, and all such places where woman's work and woman's sympathy are needed.

In Toronto last year, through the influence of the National Council of Women, we were appointed to take charge of the Women's Building, and in the Demonstration Hall, at Toronto Exhibition, we had demonstrations going on every day, in such subjects as Manual Training, Domestic Science and Kindergarten work, as object lessons to thousands of people who had never seen anything of this newer education. A number of people came to see the little ones, and were intensely interested in the Kindergarten, as it was something so entirely new to them. By that means we have created such widespread interest in these subjects, that people have written from all parts of the Province, to know how they can have these things in their schools.

In many ways we try to help women, but if I were asked to say what I thought the most important work, I would say—to help women to realize their responsibility. Not only to realize their responsibility within the four walls of their own homes, but in a wider sense to realize their responsibility as citizens.

In connection with our work we have Standing Committees, and I would like to see a member of the Women's Institute on every Standing Committee. We work in this way. A matter is brought to our attention, and we feel it is something we ought to take up. At the annual meeting a Convener is appointed, and every affiliated society is asked to appoint a representative on this committee. Naturally they appoint some one who is specially interested in the subject, so that we soon have a committee of experts from the Atlantic to the Pacific who are ready to work. These experts take up whatever the matter may be, gather information, educate public opinion, and finally present their report to the Council, when the needed action is taken.

One of the matters we have had brought before us, and that we have given much attention to, is the condition of many unfortunate women throughout the country who are not insane, but feeble-minded—women and girls who are always getting into trouble and who are defective in some way. You know the story of the famous Juke's family, and how through six generations the descendants of one Margaret were traced, and in these six generations there

were many hundreds of people, every one of whom was a defective in some way. We do not want our country peopled with persons of that description. We have been gathering statistics, and brought the matter to the attention of the Ontario Government last year. We brought the matter before the Government the year before, but they requested us to gather for them information as to what could be done to remedy conditions. We then found out what was being done in other countries, and brought that information before the Government. I was then appointed to visit some of the existing institutions for custodial care in the State of New York, when Mrs. Evans, of Hamilton, Convener of the Committee, accompanied me. A body of our Council waited on the Government, and now I am glad to say that there is a building going up in Orilla for these women and girls who are not able to care for themselves. I should be glad to be informed of any you may know of who should go into that home.

Down in Halifax the Women's National Council were very anxious to have Domestic Science introduced in their schools, and after a great deal of work and trouble, the School Board asked the ladies to look up a good teacher for them and attend to the furnishing of the school. The ladies did so, and while the teacher was on her way to Nova Scotia, the School Board of Nova Scotia suddenly discovered that they had no right to use this money, and went to the ladies and said, "We cannot use this money." The ladies of the Council said, "We will raise the money if you will have the children taught Domestic Science, but on the condition that if it is a success, you shall take the school over." I am glad to say that it was a great success, and in time the School Board of Nova Scotia took the work over.

Then, at the other end of the country, in Victoria, B.C., the Local Council have been working for the same thing. They worked for two years and they got it, and to-day the classes in the schools in Victoria are being taught Domestic Science.

The ladies down in New Glasgow determined they were not going to be behind the age, and that they also would have Domestic Science taught in their schools. So they went to work and raised the necessary money, and it is now being taught in that place. And so this is the way the work goes on.

There are several things we want your special help in. We are trying very hard to establish home industries. We firmly believe that it is much better for a woman to carry on industries in her own home than in a factory, if it can be done. We want to establish markets for these industries. The French Canadian women do beautiful work in spinning and making homespuns. They make beautiful material for dresses, etc., and the National Council is working to further these interests. If you know a woman who does good work of that kind let us know, and see if some of the women who used to do things of this kind would not do it again if there was a market for it.

At the Toronto Fair last year we had an exhibition of these homespuns made by women at home, and could have sold three or four times the amount had they been for sale. The Woman's Art Association, one of the Federated Societies, would be glad to get in touch with any women through the country who do work of the kind I have mentioned. They are also offering prizes for homespuns.

The organization of the Women's Institute, is one of the finest things that was ever done by any Government on the face of the earth. I am a Reformer, but if I were not I would still say we should be proud that our Government did help to establish Women's Institutes in Ontario. But remember that Ontario is only one Province in the Dominion. We have no Institutes in other Provinces. We want to do our best to establish them in other Provinces, and in this you can help us. If you have

friends in other Provinces write them about the Institute, and tell them how good it is for you, and pass it on to them. We will do all we can to help you.

One of our Standing Committees is one that we call "Agriculture for Women." The Convener is Mrs. Clare FitzGibbon, known to all as "Lally Bernard." She is intensely interested in this matter. She is in England at present, and has sent me a list of questions for which she desires answers, secured through the medium of the Council throughout the Dominion. I think the Women's Institute Officers can get the information in Ontario better than any one else. We want to gather information from about twenty representative farmers' wives or daughters in every district, and if we can gather such information from the Atlantic to the Pacific, it will be a very valuable report. It will show just where we stand.

The questions to be answered are as follows:

1. Is farm life a desirable one for women?
2. On how many farms is milking still done by women?
3. How has the establishment of dairies, cheese factories, etc., affected the pocket money of women?
4. On how many farms are daughters remaining at home to help the mothers of the house?
5. What are the occupations of the daughters who have left home?
6. What is the average acreage of the Canadian farm, and how much help is employed thereon?
7. On how many farms is good health enjoyed by the women? If there is illness, what is the disease?

If we can get this information from twenty different women in each locality, it will be reliable and valuable both for the Province and for the country.

One matter that has been referred to the National Council of Women, of which you are part, is the indeterminate sentence of prisoners. Do you realize that the Mercer Reformatory is for the whole of Ontario? Do you realize that women are put in there for short terms, say from three to six months? Do you realize that the very hour in which they are to come out is known to their friends, and they are waiting to take them back to their old life? Hardly any one is willing to take hold of the poor girl in such a condition and give her another chance. Can you imagine the influences she has to stand against, when there is no one willing to help, but all ready to pull her back? Would it not be a better thing if the time of her sentence were not announced? If a woman is taken into the hospital with typhoid fever, we do not say she is to remain for two weeks and then come out. She is kept there until she is well. If these women could be sent to the Mercer Reformatory and kept there until they are strong enough spiritually, mentally and physically to go out into the world and face its struggles, would it not be better than to sentence them for a short time, and then when they are discharged have some one ready to take them back to their old temptations and sin? I would like you to talk about this in your neighborhood. You will find literature about it. Read it up, and then send us your opinion about it, and if the consensus of opinion of the women of the Province is in favor of it, we will go to the Government and ask that the law be amended. The Government wants public opinion back of things, and that is the only way to get any law passed.

As citizens will you not look into this; think about it; read about it, and some day when you are dreadfully tired, and things are all going wrong, just remember that you promised to look into this matter, and then right away go and see if you cannot find out something about it. Instead of tiring

you, this extra work will refresh you. I tell you it is just when I am so tired I do not know what to do, I go and sit down to something that is entirely different, and I am rested at once. And so it may be with you. I know you are all busy women. If you were not busy women I would not ask you to do anything. It is the busy women we want, they are the women who can help us to do these different things. Our home is not bounded by the four walls of our house. All these matters concern our home, because it is wider than the four walls of our dwelling. If we do not have these matters brought before the Council and acted upon, it may be that our own children in the years to come will feel the want of our not having attended to these things. And so I say to you it is women's responsibility that the Council has to do with. I am glad to know you are one with us and that you are going to help us in every way you can.

I would like to send to each Institute a copy of our Hand Book. You will find in this a list of the papers and addresses that have been given at the meetings. If there are any of these papers you want read at your Institute meetings, I will be only too glad to send you a copy of the Year Book in which it is printed in full. I am going to try and get your Superintendent, Mr. Creelman, to send a copy of the Year Book of the National Council of Women, to each Institute.

Then we have a little leaflet called "The Messenger," which tells what the different Councils are doing. The subscription price is fifteen cents a year, and we would be glad to have any or all of you subscribe for our leaflet, so that you may keep in touch with the work we are doing.

After all should we not work to make our country a better country: to make it more and more God's country? This work is not confined to any church or to any branch of people in any country. The Canadian National Council of Women is working to make our country more truly God's country, and to establish that righteousness that exalteth a nation.

GREETINGS FROM SCOTLAND.

By W. S. Ferguson, Perth, Scotland.

I only gathered the objects of this meeting a few moments ago. I have been learning the thorough way in which everything is being conducted at this Agricultural College by the President, Dr. Mills. I understand that this Department (Domestic Science) is a new one, and that the young women of the Province who intend to marry farmers may come here and get instruction to help them to make good wives. That is a praiseworthy object.

Too many young women want to begin where their parents left off. Young men cannot afford to marry a wife that is not a housewife; it is too expensive. It is very well and right that young ladies should be taught to do everything in connection with the home. Even if you do not have to do the work, the knowledge is very easily carried about.

I hope you will never in this country need as many "Indigent Genteel" women's societies, as we have at home. These are generally made up of ladies who have wealthy and extravagant fathers, who forget that the day may come when their daughters may have to depend on themselves for their living. That is not the way it should be. Part of the object of this Institution is to make young ladies useful members of society and to help them on in life.

Now really, ladies, I have not anything to say. This is the first time I ever addressed a meeting of ladies in my life. It gives me a little courage

to see so many ladies here. I had the privilege of attending the Exhibition in Chicago a few days ago, and while there was unfortunate enough to be present where there were nearly three hundred ladies present, but there was only another poor Englishman and myself to represent the other side of the house. Of course, as you know, there were too few men to go around so we were well taken care of. (Laughter)

I hope that when this Institution is completed it will amply fulfil the objects for which it was intended, and that the young ladies of this and other Provinces will take advantage of it, the same as the young men have done in the College. I thank you for your kindly reception, but if Dr. Mills had told me beforehand that he would expect me to address you I would have refused absolutely.

WOMEN'S INSTITUTES AS SCHOOLS OF DOMESTIC SCIENCE.

By Mrs. Andrew Kinney, Grand View.

In taking up the subject of "Women's Institutes as Schools of Domestic Science," I would like to draw your attention to that chapter in Holy Writ known as the "Woman's Chapter." As we all know, it is a lesson on chastity, temperance, and justice, as given to King Lemuel by his mother, and the praise and properties of a good wife are set forth. I would like to quote part of that chapter before going further:

"The heart of her husband doth safely trust in her.
She will do him good and not evil all the days of her life.
She seeketh wool and flax and worketh willingly with her hands.
She riseth also when it is yet night and giveth meat to her household.
She considereth a field and buyeth it; with the fruit of her hands she planteth a vineyard.
Her candle goeth not out by night.
She layeth her hands to the spindle, and her hands hold the distaff.
She stretcheth forth her hand to the poor; yea she reacheth forth her hands to the needy.
She is not afraid of the snow for her household; for all her household are clothed with scarlet.
She maketh herself coverings of tapestry; her clothing is silk and purple.
She maketh fine linen and selleth it; she delivereth girdles unto the merchant.
She openeth her mouth with wisdom; and in her tongue is the law of kindness.
She looketh well to the ways of her household, and eateth not the bread of idleness.
Her children rise up and call her blessed: her husband also, and he praiseth her.
Favor is deceitful and beauty is vain, but a woman that feareth the Lord she shall be praised."

Possibly this son was contemplating marriage, and with all a mother's jealousy and concern for his future, she was selecting for him a person whom she thought would make him a suitable wife. Did she expect to find any one woman who could combine in herself all these gifts and graces that are mentioned? Had she so trained her son that he would be worthy of a wife of such a noble description? These questions we cannot answer, but this we know, that the daughter-in-law must be as near perfection as possible, and it is a sad thing for the young girl when she falls below a mother-in-law's expectations. Strange is it not? that so much is expected of women and so little is said about the qualifications of good men and good fathers! Our journals and magazines are full of advice to mothers, but there is very little advice given to fathers. Have they attained so near unto perfection? We know there are many good men spoken of in the Bible, but it was woman who followed our Saviour to the cross; anointed his feet before death; were first at the tomb, and who told to the sorrowing disciples the glad

tidings of his resurrection. We find that woman has many weaknesses, but in emergencies she is always on hand.

> "Oh woman! in our hours of ease, uncertain, coy and hard to please,
> When pain and anguish wring our brow, a ministering angel thou."

Let us look a little more closely into the character of this ideal woman. Is it possible for us to attain unto it? Some of the qualities which make up the character of the ideal woman are—fidelity, industry, forethought, business ability, inspiration to others, religion and charity. The last two seem to conflict somewhat, but true religion cannot exist without charity, and the reverse is equally true.

But there are two ideal heads needed for this realm called home. Just here a few lines from that old poem by Elizabeth Barrett Browning, called "A Woman's Answer," suggest themselves, viz.:

> "Do you know you have asked for the costliest thing
> Ever made by the Hand above—
> A woman's heart and a woman's life,
> And a woman's wonderful love?
> Do you know you have asked for this priceless thing
> As a child might have asked for a toy—
> Demanding what others died to win
> With the reckless dash of a boy?
>
> You have written my lessons of duty out,
> Man-like you have questioned me:
> Now stand at the bar of my woman's soul,
> Until I have questioned thee!
> You require your bread shall be always good,
> Your socks and your shirts should be whole;
> I require your heart shall be true as God's stars,
> And pure as heaven your soul!
>
> You require a cook for your mutton and beef—
> I require a far better thing;
> A seamstress you're wanting for stockings and shirt—
> I want a man and a king!
> A king for the beautiful realm called home,
> And a man that the Maker, God,
> Shall look upon as he did the first,
> And say, is very good!
>
> I require all things that are good and true,
> All things that man should be;
> If you give this all, I would stake my life
> To be all you demand of me.
> If you cannot do this— a laundress, a cook
> You can hire with little to pay;
> But a woman's heart and a woman's life
> Are not to be won that way."

True, we know there are very many happy homes throughout our fair land, the heads of which are true to their trust, and their children rise up and call them blessed. We are reminded in our chapter that the "wife looks well to the ways of her household." Does the husband stand by? Does he, too, look well to the ways of his own household? "Her husband is found in the gates, where he sitteth among the elders of the land." Am I apparently departing from my subject? Nay. Our Women's Institute work is in the home. Their aim is to dignify and lighten housework, having in mind as well the cheerful side of life. Making our Institutes Schools of Domestic Science means members better fitted for their life work because of the lessons learned and also because of the occasional change which helps

to make all people more efficient for their routine duties. Our aim is also to multiply these happy homes until in the bright coming future housework as drudgery will be unknown, but on the contrary will be recognized as one of the noblest professions.

Some have even dared to assert that the hap-hazard way of doing work in the home has driven girls to take up other occupations. Does education pay? It all depends on what we consider the most worth while in life. Only those things pay that enrich life itself; that enable a person to realize a full measure of life. Education can do all this; it alone can give a person control of all his faculties. Education is not only knowing but it also implies the ability to do. We measure a person's ability not by what he knows but by what he does. By this standard the great Judge himself will one day judge all mankind.

Then where are we at? Are we at the leavening stage being raised to a higher standard? Are we going to make our Institutes Schools of Domestic Science? Thinking women to-day are desiring deeper knowledge which gives to them greater powers for usefulness. Scientific training is a stronghold for guiding our ship of state, truly giving greater power to run it smoothly over oft-troubled waters.

Then, will we do the thing that lies next? After improving the running of our own machinery we should share our knowledge with others. Have we allowed our family altar to crumble? Are we as sunshiny in temper as we might be? Are we easily irritated and worried? Is it not our duty, as housewives, to push forth every effort to keep our domestic machinery running smoothly? When we throw out all the sunshine we can muster, the result is a light that is seen on every member of the household. Do we try to hide the cloud which Dame Gossip endeavors to spread against any one?

Possibly a mistake is made at many of our meetings in taking up too many subjects at one session, so that there is not time to thoroughly thrash out one subject before another is brought up. We are all anxious to learn, but it is doubtless the best plan to learn thoroughly each subject which is brought before us. Would it not be well at the beginning of a meeting to glance over the programme of the preceding one, and then talk over the most important points brought out at that time. This would tend to cultivate memory and also close attention.

Are we lacking in industry? I think most of us here can truly say "no" to this question. But in this matter of industry I would like to point out that no woman should go beyond her strength. It is a sin against the laws of nature. Let a woman do what she can according to her strength, leaving the heavier duties for those of stronger muscle. Even though there may be many heavy tasks which she cannot undertake, it may still be true of her that "she looketh well to the ways of her household."

Then, this woman is clothed in silk and purple. Many mothers think that the wants of every member of the family should be supplied before their own, and in some cases "anything is good enough for mother," if only the children can be dressed in an up-to-date fashion. But this is not the ideal character portrayed in this chapter. "She maketh *herself* coverings of tapestry; her clothing is silk and purple." This Queen cannot reign over this household if she is untidy and unkempt. She must dress in silk and purple—royal colors. Is she not the queen of one of the most important kingdoms ever planned by our Creator? Poets have sung her praises, artists have painted her portrait, authors have described her in the most beautiful words of the language—always the ideal.

Miss Van Rensselaer reminded us yesterday that we work away, and work away, without taking time to think, or even to rest our bodies. We are

trying to accomplish too much, but we do not go properly about it. Let us find easier ways of doing our work. Miss Van Rensselaer threw out many suggestions in regard to this. Her talk suggests to my mind one thing, and if in an Institute meeting we can throw out but one point that will be helpful to the different members in their homes, we may surely be satisfied and repaid for any time and labor we have expended in the preparation of a paper or an address. Some people think it wasting time to attend a Women's Institute meeting, but we all know that we require recreation, and I feel that it is just as beneficial to attend a meeting of this nature as to lie down for a rest. We are all studying how to make our work easier and lighter, and I know of no better place to compare notes and get helpful suggestions than at an Institute gathering.

When we were out on Institute work last summer, Miss Fisher, in preparing some of her dishes, demonstrated to the ladies an easier way of beating the white of an egg. I recognize many here this afternoon who were at those meetings last summer. I do not pretend to take up "Domestic Science," but am a farmer's wife—not a college taught lady as has appeared on this platform before me, but I am glad to take Miss Fisher's word. She said we could beat an egg without using our whole body, and illustrated the wrist movement, showing that by holding the elbow close to the side, the egg could be beaten up stiff and light, by using the hand and not the whole arm, as is usually done. After the meeting was over I said to Miss Fisher, "You omitted one thing; you did not make it as easy as you might have done; you neglected to tell the ladies they might have a chair handy, and while beating the egg they might sit down and rest for a few minutes. You can beat an egg just as well when sitting down as when standing up. I do not know whether I could wash dishes sitting down, but I have been trying lately to take more rest at my work, and do it whenever it is at all possible.

Another thought in reference to lightening household duties, that may be helpful to some one, is in reference to the doing up of lace curtains. At an Institute meeting one lady told how she did up curtains, and I will tell you of it, though possibly it may not be new to all of you. When the curtains are washed and starched, fold them lengthwise, and pin the double row of scallops to the line, using a different pin for each scallop. Then put a heavy pole in the middle of the curtain, and the weight of the pole will smooth the curtain down. Pull it all out smoothly and the curtain is then ready to dry. You may have a little difficulty in getting a pole sufficiently long for this work, but most women can easily overcome a difficulty as small as that. Mrs. Cummings reminded us yesterday that when a woman starts out to do a thing she usually keeps at it until she accomplishes her purpose. When you take the curtain from the line you will notice that the scallops are bent over, from being pinned to the line. This may easily be straightened out by the use of an iron. This method of doing up lace curtains will give you curtains that look just as nice as those which have just come from the store.

The Women's Institutes were organized in the first place to help the Farmers' Institutes in their evening meetings. They could not get along without the ladies and so proposed that the ladies assist them in the evening meetings. The wonderful growth of the Women's Institutes is in response to the call of the Superintendent for help from the Farmers' Institutes. The first organization was called the Women's branch of the Farmers' Institute. You have heard how the membership has increased, and how the movement is growing. The organization has taken deep root. Why? Because it touches the home. It is spreading not from the least to the greatest, but we may say from the greatest unto the least, for this movement has

been taken up by the most progressive people, and it is spreading until it shall reach every hamlet in our fair Province. There is mission work to do in the Institute. There are many housewives who have so many household duties that they find it difficult to get out to meetings. Perhaps there may be some way planned so that the mother who has so many home duties may be relieved of them by other members of the Institute so that she may get to at least some of the meetings. We can all testify to the fact that the meetings are entertaining and helpful and that we have real jolly times, and this is just as beneficial as rest, and we all well know we must have rest.

Then, we are proposing to make the Women's Institutes schools of Domestic Science in another way. At least one of our Institutes—the pioneer Institute of the Province—feels that it has outgrown home papers and home talks; that they want stronger food; they want teaching. How is this to be managed? How is the desired information to be brought into the home? When you have demonstrations in cooking you carry home recipes, but you do not know what food contains; you do not know the nourishing properties. We are coming to the stage when we want to understand thoroughly the different properties of food and to understand the reason of many things pertaining to this part of our life and work. I am quite in sympathy with the remark of one of the speakers yesterday, that she would like to step back a few years and come along with this young generation. Even though it is a little hard for one of my age to grasp all these things, I have undertaken a course in the Canadian Correspondence College, and I enjoy it thoroughly. It is my intention to continue the course if my sight and strength will permit. I see in this line of work and study a great help for the members of the Institute. Many of the younger members might take up this course of study, and so be in a position to greatly help the other members. The course is planned for those who cannot leave home to take the course in Domestic Science, such as is given in the Macdonald Institute. No doubt some arrangement could be made whereby several taking up the work of the Correspondence Course, might be of benefit to the whole Institute. In the discussion which will follow this address, I would like to hear questions about the work.

We believe that the Women's Institutes are going to have the same effect on our rural homes as the schools of Domestic Science will have on the towns and cities. You know how the work of these schools is helping in the home problem and dignifying household labor.

I do not like the term "Servant girl question." There is a great scarcity of help in the home we all know. Just look around. If you should be in any large city at noon, you would see streams of young girls trooping home to dinner, from where? Factories and shops where the work should be taken up by the opposite sex. There are many places where men could work and where the girls are needed in the home. We want to do all we can to bring the girls back into the homes, which is undoubtedly the proper place for them. They are now out of their proper element. Schools of Domestic Science are dignifying the work of the home. No dignified girl wants to go into a home as a servant girl. Many of them are brainy girls. When the household situation is recognized as requiring just as much brain and just as fine and noble a character as that of the teacher in the school, or the clerk in the store, there will probably be a great deal less objection to it on the part of some of the young girls of our homes.

DISCUSSION ON MRS. KINNEY'S ADDRESS.

Mrs. D. McTavish, North Bruce: I am sure I am very much pleased to see such a large and representative gathering from the different Women's Institutes of the Province. I think it augurs well for the good of our country to see so many women come together to consider what is for the best interests of the women of the country, particularly in regard to the home.

The Chairman has said that in this discussion we are to be brief, and I shall certainly not disobey her in that respect, and I trust there will be just as many ready to discuss this question as there were to discuss the dollars and cents this morning.

You must surely all have listened with a great deal of pleasure to Mrs. Kinney's address, and I am pleased to note the source from which she took her text. That chapter is one we might well consider. It would take us a long time to know all that is in it. It is a true model of the ideal Women's Institute woman. She should have all the qualities Mrs. Kinney mentioned. She should be a business woman, as well as a help to her husband. I think that farmers' wives might take a lesson in that they should be interested in all that concerns their husbands. Not only in all that is brought into the home, to be under their special supervision, but they should be interested in the crops and soil and everything else. "She considereth a field and buyeth it." That woman knew something of the nature of soil before she could consider a field and buy it. We should know something of the soil on our farm, and be able to advise with our husbands about what crops we think would be best. If we occupy the true position of help-mate we should be able to advise and confer and help in everything. That is what a help-mate means. We should be interested in everything he does.

I am a farmer's wife, and I am proud of it. I do not think the farmer's wife need step down to anyone. We on the farm seem to receive more directly from the Creator's hand than any other class. If a woman in the city wants good flour she is interested in that, but the country woman is interested in the sowing of the grain, in seeing it grow, in the showers of rain, in the harvesting of the crop, in having it milled and made into flour; in fact in every stage of its progress until she uses it for making bread. And not only is she interested in the wheat and flour, but she must have the skill to make the best possible loaf of bread, so that the members of the family may have good food for the building up of strong bodies.

The question under discussion is "How to make our Women's Institutes Schools of Domestic Science." I think that is what the Institutes were meant to be, and if we do not try to make them that, we are not fulfilling all that they were designed for. Everything is being done for us, and we ought to realize the conditions that we are working under. Our mothers and grandmothers did not have these privileges and we should try and use them to the best possible advantage.

We are told that the Women's Institute movement was inaugurated for the purpose of disseminating information in reference to Household Science, Art, Architecture, and so on. It does not matter much what you call it, Domestic Science, Domestic Economy or Household Science, or Home Economics, it embraces everything connected with the home. I think we should try to learn all that we can regarding these things.

At first sight there may seem to be many things that have no connection with us—architecture for instance. Yesterday we heard Miss Van Rensselaer speak a few words in reference to plumbing, carpentering, etc., and the disadvantages under which the woman labors who knows nothing about the building of a house, and fitting it up inside. I think we should know all

we can about these things. We cannot all have a scientific education, but we can bring a good deal of common sense to bear on these things, and just between us I think that "common sense" and "Domestic Science" are very closely allied.

We are not all going to build new houses, but perhaps many of us are going to make alterations in the houses we already have. We need to see to it that our houses are properly ventilated so that we have plenty of good, fresh air. In summer time it is very easy to have plenty of ventilation, but we must remember that it is just as necessary to have proper ventilation in winter. And so we should study all these things very carefully. The Institutes which have libraries have no doubt books treating on the subjects to which I have referred.

Dr. Mills told us yesterday we should observe and read. I am sure that all the ladies here are intelligent ladies, who are only too glad to find out all they can in this way. We want to read so that our knowledge will be increased. There is a great deal of reading matter in the Public Library that will not elevate one very much. In the books which we select for our Institute Libraries let us select those which bear on the subjects on which we wish to get information. In our West Bruce Institute we have not a large library, but I think there is not a subject comes under consideration but we have some books that will help us in studying the matter. We find our library very helpful indeed.

Not only should we be careful of the reading matter which is put in the Institute Library, but I think we should be careful of the reading matter that comes into our homes. I think we should read with our children. I was very much pleased yesterday to hear Mrs. Willoughby Cummings tell of what the National Council of Women has done to rid the Province of pernicious literature. I think that we as members of the Women's Institute should be just as much interested in that as in anything else that pertains to the home. There is no one in the country that has the same responsibility that we, as mothers, have in the home, because what is left undone there can never be remedied either by Legislation or in any other way. So much depends on us! "The hand that rocks the cradle rules the world" cannot be repeated too often, for it is the truth. We must remember that we have much to do with their temporal as well as eternal destinies. I think, therefore, that we should read things over with our children, and explain things to them that they will not be liable to be led away afterwards.

Then besides all these there are many other things that we should study. Mrs. Kinney mentioned that in some places they are getting so far advanced that they do not want home papers and local talent any longer, but want some one to teach them scientifically. I think we will plod along a little while yet in the old way. We all know how many little things are a help and inspiration to us, and I think we should each be willing to take our share of the work, and so make our Institutes Schools of Domestic Science. We should study the nutritive properties of foods, as well as the care and training of children.

So, for instance, if we were going to have the subject of "Fruits" under discussion, we would allow one member to take up one kind of fruit and tell us how they like it best. Then, if others think they have a better way of preparing it, they tell their experience and method, thus exchanging ideas on the subject. This is an excellent plan to get women to talk in an informal way at the meeting. If you get a woman to the place where she is not afraid of the sound of her own voice when she gets up to speak, you have done a great deal.

The subject of "Rest" was brought up yesterday. We do not always rest when we might. We mothers do not teach our children to rest as they

might. We think when they are getting their education they should not have anything else to do, whereas the taking up of some light household duties would really be a rest from their studies. If they are allowed to grow up without taking any part in the home work, they will not have any taste for it. Physical exercise is a great benefit, and we should teach our girls to make beds, wash clothes, etc. It will not harm them, and will be a great help to the mother, in giving her time to have required rest from these duties which crowd upon her. Any true and loving daughter will be only too glad and willing to help share the mother's burden.

I think that all girls should be taught to attend to their own clothing. I do not mean to merely teach them to run up a seam on the sewing machine, but to do it by hand. No one can mend with the sewing machine. We hear a good deal about the old fashioned quilt, and about cutting cloth to pieces and sewing it together again. I would not do that, but at the same time there are in most homes many pieces, and putting these together is a good way to teach the children to sew. They will take a great deal of pride in getting a block to look nice and all the time it is teaching them to sew. I think it would be a pity if this work were dropped, even if it is old fashioned. But whatever we do we should see to it that our daughters are taught to sew and to assist their mothers in the home.

It does not look very well to have a young girl come home from school, go into the parlor and play the piano, while her mother washes dishes in the kitchen. I think it is the mother who should be resting in the parlor if there is any resting to be done. If we would all use a little judgment in getting the children to help in the home, the mothers could get much more rest than they do.

We have heard a good deal about the farmer's wife and the farm home. There are a good many farmers' wives here and I think probably they all have a good deal to do. You know a farm home cannot be complete without a woman. A farmer without a wife cannot get along at all. We might imagine a man getting along in any other position without a wife, but not on a farm. You know Adam needed a wife before he fell, but how much more so after? I believe that woman has been helping to raise man ever since. We all know that when a young farmer makes up his mind that he is going to make a success of his business, he first looks out for some young woman to look after him, because he is incapable of looking after himself. (Laughter)

We heard yesterday of many things that men could do for their wives, but I may say that I would not care to see my husband making bread, nor to eat it if he did make it. But there are many ways in which men can help their wives. I know that a farmer has very little time to help in the house, because he has his own out-door work to do. Helping in the house may be all right when a man gets up in years, or it may be all right when a woman is not well or may be over-burdened, then, of course, it is her husband's duty to assist her.

There is just one word that we might all pay strict attention to and study both in our homes and in our Institutes—which would help us much both in the way of work and rest, and that word is "Simplicity." If we were more simple in all our ways it would help us. We might be more simple in the furnishings of our homes, for most of us have many things we do not need. It means much more work to keep all these things dusted and in their proper places, especially if there are children in the home. A little more simplicity in the furnishing of the home and the dressing of the children would be much better. We put many extra frills and flounces on them that are quite unnecessary to their health and comfort. They would be just as happy and comfortable without them. Do not try to raise children

on sweets and cakes, and expect that they will develop sound minds and bodies. Give them good, nourishing food, and bring them up to be useful members of society, and I believe that in the future they will do their duty by you in return.

OPEN DISCUSSION.

Mrs. Farley, Trenton: I would like to hear something about co-operative laundry work, which I saw mentioned in the Farmers' Sun.

Miss Bella Millar, Guelph: Co-operative bakeries were touched on this summer, but they did not seem to go forward as we expected. Some suggested that laundries might be run in connection with the creameries throughout the country, and that the power which ran the creameries might be also used for the running of laundries. The wagon which collects and distributes for the creamery could also collect and distribute for the laundry.

Mrs. James Gardner, Kemble: I do not think we need trouble ourselves about the matter. Necessity brings the desirable conditions. These changes may not be in our day, but no doubt the time will come when such co-operative laundries will be established.

Mrs. Farley, Trenton: We find that if we are rid of our laundry work in the home we are relieved of a great deal. It is almost impossible to get help into the house. Girls will not hire out, particularly in the country.

Miss Bella Millar, Guelph: I know of a place where they solve their labor problem in the home by getting their washing done at a laundry. The same wagon that takes the milk to the creamery takes the clothes to the laundry, and then the clothes are returned in the same way. The place I refer to is in Middlesex County. If such a thing were possible how many ladies would be in favor of having co-operative laundries throughout the country? (About one-third of the audience were agreeable). That is not bad for a new venture. I think the day is not so far distant as some may think when we will have in Ontario both Co-operative Laundries and Co-operative Bakeries.

Mrs. J. E. Brethour, Burford: Would not an exchange of visits of different Institutions be a good thing?

Miss Bella Millar, Guelph: Yes, I should think this would be a very interesting and profitable arrangement.

A Delegate: Is each delegate here required to bring the seven questions which Mrs. Willoughby Cummings has given us, before her home Institute?

Miss Bella Millar, Guelph: The idea is to bring these questions before each Institute. The Women's Institute organization is affiliated with the National Council of Women, and as the Secretary of the latter, Mrs. Cummings has asked us for this information. It will therefore be quite in order for each delegate to bring the matter before her local Institute and send the desired information to Mrs. Willoughby Cummings, 44 Dewson Street, Toronto.

Miss Lulu Reynolds, Scarboro Junction: I may say in reference to our Institute that at times we do get outside help for our meetings. But I believe we should be growing now, and should not have to depend on outside help to run our meetings. I gathered from the discussion this morning that many Institutes rely entirely on outside help, and are bankrupt. They will find this to be the case as long as they depend on outside help. Let us learn to depend on ourselves. Let us study the problems and work them out.

Miss Bella Millar, Guelph: Some Institutes have made the mistake which Miss Reynolds has pointed out, and are sorry for it to-day. In East

York they are doing a good work, and are developing the talent they have at home rather than relying on outside help.

Mrs. A. P. Annis, Oshawa: I would like to bring before the Convention a matter which we think should be looked into. It is in reference to the unsanitary way in which bread is delivered. In the South Ontario Women's Institute we have passed the following resolution, viz.—

"Resolved, that the Executive Committee of the South Ontario Women's Institute wishes to place on record its disapproval of the unsanitary way in which bread is handled by our bakers, and also to request that the Provincial Board of Health take some steps to have the individual loaves of bread enclosed in paper sacks before being put in the delivery wagons."

FIVE MINUTE REPORTS OF INSTITUTES, PRESENTED BY MEMBERS.

Amherst Island.

The Amherst Island Women's Institute was partly organized in November, 1900, by Miss Alice Hollingworth. In the following March, the organization was completed, and at the June meeting, 1901, we were able to report a membership of over fifty.

The membership to December, 1903, is over sixty.

We have no Branch Institutes on Amherst Island, but through our work and interest an Institute has been organized in Lennox County, with District Officers at Adolphustown.

Our Library, consisting of about seventy volumes, contains works on Domestic Science, Nursing, Sanitation, Gardening, Nature Study, also works of fiction by some of the best authors. The magazines subscribed for this year were: Canadian Good Housekeeping, Canadian Teacher, Farmers' Advocate, St. Nicholas, Success, Leslie's Weekly, Review of Reviews.

Each member may take one book and one magazine a month. These are exchanged after the regular monthly meetings, by our Librarian, Mrs. Allen.

We have met with few hindrances. Probably the principal drawback is the indifference of many that we would like to see become members. This may be due to their not understanding the objects of the Women's Institutes. We owe much to the help and encouragement given us by the Amherst Island Farmers' Institute, the members of which make a point of seeing that the horse and carriage are ready for "Mother" or "Sister" on the second Saturday of every month, which is the day appointed for the regular monthly meeting.

The most suitable time for summer meetings in our district would be early in July, before the harvest begins.

The benefits derived from the Institute can be felt in the increase of friendliness among the members and the sympathy shown in one another's work, hopes, sorrows and pleasures; in an increased desire for good reading, and a keener interest in what is going on in the world outside, as well as in our own community: also better methods of housekeeping and home-making.

Our outlook for the future is encouraging. On account of our isolated position we cannot hope to greatly increase the membership of Amherst Island Institute, but we will gladly do anything in our power to organize Branch Institutes, and in any way possible show our sympathy with the aims and objects of the Ontario Women's Institutes.

In addition to the usual ways of disposing of Women's Institute funds, such as rent of halls, delegates' expenses, library, printing and postage, we present to each member on payment of her second year's membership the Women's Institute silver badge.

We also offer a yearly prize to the "Entrance Pupil" who makes the highest marks in the Township. Should the prize-winner in the Township be also the first in the County, a medal is to be given as an additional reward for good scholarship. Mrs. R. D. McDonald, President.

North Brant.

The North Brant Women's Institute, which was organized at St. George, in January, 1903, has had a very successful year. Meetings have been held every month with the exception of August.

The membership for 1903 is one hundred and thirteen.

Carefully prepared papers have been given on the following subjects: Bread Making, Food as Nutriment, Meats, Fish, the Buffalo Moth, House Cleaning, Poultry Raising, Salads, Household Accounts, Deserts, Jelly Making, Economy of Strength in Housework, Breakfast Menus, Home-Making, The Value of Fruits as Food, Pickles, The General Culture of House Plants. After the giving of the different papers interesting discussions followed, by which a great deal of practical information was elicited.

In June, Directors were appointed for different sections of the District, and Branch Societies have been organized at Tranquility and Moyle, Cainsville and Onondaga; at all of which places good, practical work is being accomplished.

Besides the general business at the June meeting, Miss Bell, a member of our Institute, and a graduate of the Oread Institute Massachusetts, gave a demonstration on Jellies, Dipping of Cakes, Making and Serving of Salads. Miss Bell provided all the materials for this demonstration without any cost to the Institute. She has the faculty of explaining while she is working; giving in an interesting way the nutritive properties and values of each article used in the preparation of the food.

The July meetings were well attended. Miss Jessie Hills, of Toronto, gave a demonstration in cooking, and Miss Millar, of Guelph, gave a talk on First Aids in Emergencies.

A special feature of our meetings was the Question Box, which was found very useful in bringing up a variety of subjects for discussion, and in showing different methods of doing every-day work.

The Institute subscribed for the following magazines: Good Housekeeping, The Modern Priscilla, The Boston Cooking School, Table Talk, The Household Ledger, Home Science Magazine, Woman's Farm Journal, and The Housekeeper.

The expense the Institute has had for the year was the cost of the magazines and paying the expenses of the delegates' tour throughout the district. The attendence at the meetings has been good; interest is on the increase and at almost every meeting new members are added to the roll.

Edyth G. Kitchen, Secretary.

South Brant.

Date of organization—January 10th, 1901.

Number of members for 1903—200.

Number of Branches—Three, viz., Mohawk, Scotland and Catheart.

Library and Periodicals supplied—Last year, four subscriptions to "Home Science Magazine," and this year for "Canadian Good Housekeeping."

Other ways of disposing of Funds—Secretary's salary and general running expenses.

Hindrances met with—Indifference.

Most suitable time for holding Summer Meetings—None. July if any.

Benefits derived from the Institute. Many. The Institute is to a large extent, transforming women's part in agriculture, which formerly seemed imperative duty, into subjects of interest and pleasure. The Institute has developed dormant talent. It is also a benefit socially, and has broadened many of our views.

Outlook for the Future—Bright. Emily A. Lester, Secretary.

Centre Bruce.

Date of Organization—January, 1902.

Number of members for 1903—Seventy-two.

Number of Branch Institutes—Five, viz., Paisley, Kincardine, Ripley, Glamis and Chesley. The latter was organized in July, but has not reported.

Extent of Library and Periodicals supplied—About two dozen books and pamphlets and two periodicals. Kincardine Branch have several magazines.

Other ways of Disposing of Funds—Paisley pays fifty cents a month for the use of Council Chamber for regular meetings. The expenses for expenses; expenses of July delegates at Ripley, Kincardine and Glamis; also for printing, postage and secretary's salary.

Hindrances met with in spreading the work—Our riding is about forty miles across with no railway accommodation. We find it impossible for our officers to go around with delegates as expected, as we have not sufficient funds in the treasury to pay their expenses. We also find in trying to organize that no one is willing to take an office, and it is hard to get the women in our district to come out at all.

Most suitable time for holding summer meetings—June or September.

Some of the Benefits derived from the Institute—The literature is excellent. The preparing of a paper by some one who has had her time taken up with the care of a home and family, gives a new interest to the subject and helps to break the monotony of our every-day life, and the discussions which usually follow the reading of a paper, help those who may be too backward to undertake the preparation of a paper themselves.

Mrs. D. McIntyre, President.

South Bruce.

The South Bruce Women's Institute respectfully begs to submit the following report.

Our Institute was organized by Miss Blanche Maddock in January, 1901, with a membership of fifty-one.

Our membership for 1902 was one hundred and seventeen, and for 1903, is one hundred.

The District Officers are located at Walkerton, and we have four Branch Institutes, at the following places, viz., Mildmay, Teeswater, Belmore and Holyrood.

Our Library consists of nineteen books and two periodicals.

We pay our Secretary, according to Rules and Regulations governing Women's Institutes.

Probably the most noticeable hindrance met with in our district is lack of time on the part of women to attend the meetings.

June or September would be the best time to hold a series of summer meetings in our district.

Some of the benefits derived have been the lessons in Domestic Science, particularly in the practical demonstrations. Through the agency of the Institute women have broadened their social boundary, and have used every effort to circulate information among the members.

The outlook for the future is fairly good. We are looking forward to making our meetings more interesting in future.

BESSIE TOLTON, Secretary.

WEST BRUCE.

Our Institution was organized on November 17th, 1900, with a very small membership, and under rather discouraging circumstances. The officers elected at the organization were:

President, Mrs. D. McTavish,
Vice-President, Mrs. Cummings,
Secretary, Mrs. J. H. Wismer.

Mrs. McTavish still holds the position of President, but the other officers have been changed. By the persevering efforts of the officers the Institute was soon placed upon a sure basis, and a very good membership secured, there being seventy-one members the first year. Since that time we have been steadily gaining and our membership for 1903 is ninety-three.

We have only one Branch Institute: that of Tara, where they have a very good organization, with a membership of twenty-six. It is our intention to form one or more Branches during the coming year, in other parts of the riding.

We have a small library of twenty-three volumes, and are adding to it all the time, as our funds will permit. We also get three numbers of "Canadian Good Housekeeping" and three of the "American Kitchen Magazine" for distribution among our members. The books and magazines are exchanged at our monthly meetings, and are very much appreciated and enjoyed by the members.

Besides buying books for our library, we have used some of our funds to pay for practical demonstrations in cooking, which were appreciatively listened to, every one being interested. We pay our Secretary a yearly salary, and the remainder of our receipts are required for incidental expenses connected with our meetings, such as printing, postage, advertising, etc.

Some of the hindrances met with in establishing our work are—indifference and self-satisfaction. Some do not want to know, and some think they know all that is worth knowing. A false impression has also prevailed, but has to a large extent disappeared, namely, that the Institute was for farmers' wives and daughters and for them only. However, we have succeeded in convincing many that all should be equally interested, whether they live in the town or the country.

It is a little hard to decide as to the most suitable time to hold summer meetings, as the members who live in the country seem to be busy during the whole summer season. There is but a short time between seeding and haying, and then that merges into harvest. Then follows the preserving of small fruits and pickling.

The benefits to be derived from the Institute are numerous. First, social intercourse is invigorating, and the discussing of different subjects and the relative value of various methods of preparing foods, is most instruc-

tive. Again, our minds are broadened and intellects developed by the reading matter in our library.

The outlook for the future is very promising. We expect that a greater number will from time to time become interested. Each member should endeavor to interest others, and do all in their power to swell the ranks and make it a success. The literature received from the Department of Agriculture and the yearly reports, are worth a great deal more than the small membership fee which one pays.

Mrs. A. E. Campbell, Secretary.

Dufferin.

Date of organization—April 1st, 1902.

Number of members for 1903—One hundred and thirty-four.

Number of Branch Institutes—Four, viz., Horning's Mills, Perm, Laurel, Relessy.

Library and periodicals supplied to members—A monthly magazine to each member, named "Metropolitan and Rural Home."

Other ways of disposing of funds—Expenses of lady delegates.

Hindrances met with in spreading the work—Officers neglecting to do their duty. We also find some people very much prejudiced against the Institute. They think they know as much as the delegates, and try to lead others to think as they do. This is one great hindrance.

Most suitable time for Summer meetings—In the month of June or July.

Some of the benefits derived from the Institute—We have derived a great many benefits from the Institute. Some of them are—the exchanging of ideas, learning how to do common everyday work in a simple manner, knowledge gained from the reports sent out from the Department of Agriculture, and increased social life. The talk on food values and the cooking demonstrations given by the lady delegates are also very much appreciated.

Outlook for the Future—We are encouraged by the work of the past year, and are looking forward to better things in the future.

Mrs. W. J. Craven, Secretary.

West Durham.

The West Durham Women's Institute was organized on October 6th, 1900, by Mrs. J. L. Smith, Whitby. For some time the membership was small and we had some difficulty in getting members. Since our branches were organized at Solina and Hampton, interest has greatly increased and we now have eighty-five members.

Monthly meetings are held at Solina, Hampton and Bowmanville, which are fairly well attended and lively interest is manifested in the discussions which are encouraged at every meeting.

All of our meetings open with the Lord's Prayer and close with the National Anthem.

We try to have variety in our programmes and to choose subjects that are seasonable and practical. Papers are generally read by one or two members, and we have music, and the Question Drawer, and through the latter many of the housekeeper's difficulties are solved by an interchange of ideas. We have had very interesting meetings conducted by delegates from the Government, but experience has taught us that best results come from meetings where the programmes are given by local talent. Refreshments are frequently enjoyed as a pleasant variety and to promote sociability at our meetings.

We have had financial encouragement from the Government, County Council, and Farmers' Institute.

We desire some pointers as how best to use our funds to get best results in the interest of Institute work.

Our Solina secretary writes: "Our members are anxious to invest their funds in good literature that could be used at the meetings to make the programmes interesting and help the members to become good homemakers."

Our Hampton secretary writes: "I think the Institute is a great help in many ways. It helps us to get out of the ruts of house-keeping by learning how other women do their work easier, quicker and in a more economical way, and by associating in our meetings with those whom we would not otherwise meet, we form acquaintances and make friends which may be the means of much benefit and pleasure to each of us."

In conclusion we extend most cordial greetings to all other Institutes and hope that abundant prosperity may attend their efforts.

Mrs. W. L. Law, President. E. E. Haycraft, Secretary-Treasurer.

East Elgin.

East Elgin Women's Institute was organized in Aylmer, January 3rd, 1902, by Miss Blanche Maddock.

The number of paid-up members for 1903, is one hundred and sixty-six. We have already seventy-five members for 1904.

We have no Branch Institutes, but have held meetings at two other points in the riding.

During 1903 we have taken no periodicals.

The Institute has, during this year, had twenty-one lectures and demonstrations in Domestic Science, given by Miss B. W. Shepherd (Teacher in Domestic Science, Alma College, St. Thomas), Miss Fisher, Mrs. A. Kinney and Miss Gray. About twenty dollars has been paid for advertising meetings, and for other printed matter, such as recipes, etc., about sixteen dollars for rent of hall, and five dollars to the Secretary for her services, and this has about used up the funds for 1903.

The greatest hindrance this Institute meets with in spreading the work, is in the non-attendance at the meetings, as nearly all who attend join the Institute and attend the meetings regularly afterwards. At a meeting held in Mount Salem, there were twenty-six ladies present, and every one gave in her name for membership.

The most suitable time for summer meetings in our district would be from the 1st to the 20th of June.

The benefits derived from the Institute are legion. The discussion and question drawer bring out many helpful thoughts and ideas from ladies who could not be induced to give a paper or address. The lectures and demonstrations in Domestic Science have been a great help to the ladies here, especially the ones on "Cooking Meats." One gentleman told us he thought the lesson on cooking meats was worth five dollars to his wife, and a great many ladies have said they thought the membership should be one dollar per year instead of twenty-five cents, as often one lesson alone was worth that and more. Last and not least, these meetings bring out the farmers' wives for a much-needed recreation, which is oftentimes all they have from one meeting until the next.

The outlook for the work in our Institute is bright. We believe the work will grow rapidly. Our trouble is "want of funds." We could in our riding start four or five branches, as we have been asked to hold meetings at different points, but the funds on hand will not permit of our incurring the necessary expense. We would like to see the Government and the

County Councils make a larger grant toward this work, so that Branch Institutes might be organized in every section.

Centre Grey.

Our Institute was organized on May 8th, 1902.

The membership for the year 1903 is one hundred and twenty-nine.

We have Branch Institutes at Feversham, Flesherton, Vandeleur, Heathcote and Kimberly, five in all.

Our Library consists of twenty-one books, which have been ordered through the Department of Agriculture. We have subscribed for nine copies of "Canadian Good Housekeeping," one copy of "Women's New Idea," one copy of "Poultry Review."

We have expended our funds in paying the expenses of delegates for summer meetings, officers' salaries, postage and stationery, etc.

One great hindrance we meet with is want of funds; also difficulty in getting members to lead in discussions.

The most suitable time for summer meetings in our district would be the last week of June or the first part of July.

Some of the benefits derived are: Better and quicker ways of doing housework; a better knowledge of foods and how to prepare them; a better spirit socially, and the desire to improve one's home and surroundings so that they will be the most attractive possible.

The outlook for the future is bright.

Mrs. S. S. Burritt, Secretary.

North Grey.

The Women's Institute of North Grey is now looked upon as one of the pioneer Institutes, it being the third one organized in the Province. Mrs. J. L. Smith, of Whitby, President of South Ontario Women's Institute, came up to our district and organized the Institute in September, 1900. We began with a membership of twenty-three, and the interest and membership has gradually increased, until now we have a paid-up membership of nearly two hundred.

There are eight Branch Institutes in North Grey, all of which are in good running order. Some of them are represented here to-day. Bognor was organized in 1901, Annan, in June, 1902, Desboro, Kilsyth and St. Vincent, also in 1902, by Miss Ida Hunter, a delegate of the Farmers' Institute, while Massie and Chatsworth were organized in July of this year.

The Library is not very extensive. A few books have been purchased by the members at Kemble, such as "Dust and its Dangers," "Emergencies," "The Chemistry of Cooking and Cleaning." A very nice little paper called the "Farm Journal," (which costs five cents per subscription in clubs of twenty) was sent to each member. It was well worth the price and was much appreciated.

The grant of twenty dollars which we received last year was spent in securing the services of Miss Agnes Smith, of Hamilton, a very capable delegate and instructor in Domestic Science. Our President and Miss Smith visited all the Branches that were then organized, and gave most excellent practical talks and demonstrations.

In the way of hindrances we have very little to complain of, having a most efficient Superintendent in Mr. Creelman, who appears to understand every problem and difficulty that may be presented, and is ever ready and willing to send prompt and helpful advice, thus often relieving us of anxious thought and responsibility.

Our County Council has been most kind—especially Mr. Rutherford, our County Clerk. The Council have done all they could to promote our work. The first year we approached them on behalf of our Institute, requesting a grant to aid us in carrying on our work, the Warden authorized that the request, stating the Aims and Objects of our organization, should be printed in the report of the County Council of that year, of which there were 1,200 copies distributed.

In regard to the most suitable time to hold summer meetings—and we are pleased to know that there is a prospect of their being continued—we would suggest that the latter part of June would be more suitable than July. On the third week in July, when Mrs. McTavish and Miss Murray visited us last summer, it was one of the busiest times in the season, and it was almost impossible to get them taken from place to place. Many could not possibly attend the meetings, who might otherwise have been much profited by the excellent demonstrations and addresses given at that time.

One of the many benefits derived from our Institute, is the bringing together of intelligent women, and also of timid and retiring ones, who live secluded lives. The Institute is removing the idea that one's education ceases with school days. Women in rural districts are beginning to realize that more is expected of them than to simply prepare three meals a day, and do what little sewing they can for their families. Many of them have prepared most excellent papers, which have been a happy surprise both to themselves and their listeners.

We do not think it would be amiss to mention that partly in recognition of the services of the North Grey Women's Institute, Miss Blanche Maddock and Miss Lillian Gray, were sent as delegates to the North Grey Fair in Owen Sound. The ladies of the W. C. T. U. who had a tent near ours, were so pleased with the demonstrations that they engaged Miss Gray to give a course of lectures and demonstrations, of which a class of sixty or seventy availed themselves. This course was also a financial success. And thus, though perhaps indirectly, the good work goes on.

The outlook for the future is most promising to us, who at one time felt that the movement was an experiment or venture. We now realize that the Women's Institute is here to stay, and is looked upon as an opportunity for mutual improvement for the benefit of homes and families.

Mrs. Wm. McGregor, Secretary. Mrs. James Gardner, President.

South Grey.

This Institute was organized in January, 1902, by Mrs. Colin Campbell, of Goderich. The organization meeting was held in the Town Hall, Durham, on March 25th, 1902.

The membership for 1903 is seventy-nine.

There are two Branch Institutes, namely, Holstein and Elmwood.

We have a small circulating library of eighteen books and bulletins, and we also subscribe for four copies of "Good Housekeeping", which are distributed among the members.

The hindrances met with in spreading the work are as follows: Some women are timid about joining, for fear they will be asked to help prepare the programmes, and they do not feel qualified for such a "big" undertaking. Some think the Institute a fake, and others think it would be impossible for them to learn anything more about housekeeping.

I think June the most suitable time for holding summer meetings in our district, as in that month the farmers are not so busy with their horses, and it is more convenient for their wives and daughters to leave home.

The benefits derived from Women's Institutes are many. There is the social side of it, which in itself repays one for any trouble they may be put to in atending the meetings. The Institute meeting is a place where the time is not spent in talking of frivolous or nonsensical things, and in gossiping and complaining, which we are very apt to do if conversing with a neighbor or old friends. Instead of this our minds are centred on something higher and nobler, thus benefiting ourselves as well as those with whom we associate. We ought to be glad to know that for every one we help in this way the world is brighter and better.

The outlook for the future appears to be quite bright. The meetings are being more largely attended and there is much greater interest manifested.

KATE L. DIXON, Secretary.

HALDIMAND.

The Women's Institute of Haldimand County was organized in March, 1903.

The total membership for 1903 is one hundred and nine.

We have four Branch Institutes, which are located at Kohler, Canfield, Selkirk and York.

We have no library nor have we procured any periodicals up to the present time.

Up to date we have not had any insurmountable difficulties.

July would be the best time for meetings in our section.

The Institute has been the means of cultivating a better social feeling in our neighborhood, which is a great benefit.

The outlook for the future is most encouraging.

EMMA M. THOMPSON, President.

HALTON.

The Halton Women's Institute was organized at Milton, by Miss Blanche Maddock, February 2nd, 1901. It was a small beginning as our membership at that time was but ten, but our watchword has been "Forward."

Last year, (1902) our membership was two hundred and thirty-nine. We aimed at doubling it, but we have exceeded that by twenty-six, making a membership of five hundred and four for 1903. We have thus sustained our proud position of being the Banner Institute of the Province, although our County is the smallest.

We have five Branch Institutes and the Main Institute at Milton. Flourishing Branches are organized at Georgetown, Burlington, Acton, Campbellville and Palermo, each holding regular monthly meetings with interest and profit.

We regret we have no library to report, but each member receives a copy of the "Woman's Magazine."

Our funds have been disposed of principally in paying for demonstrations and lectures, which have helped us greatly in increasing our membership.

Now, in presenting our report we have a story of discouragement as well as encouragement, and, like the rest of you, we have many difficulties to deal with. These difficulties are:

(1) To secure enthusiastic and energetic directors.

(2) To convince the town women that our Institute deals with problems that affect them as closely as it does the women in the farm home.

(3) Lack of knowledge as to the benefits to be derived from the practical work of our Institute.

We think in our county that the most successful summer meetings would be in June. There are several reasons for this, which I will not enumerate here.

Our benefits are innumerable. Our town and country women are drawn into closer sympathy with each other; our meetings draw all classes and denominations together, and we have the opportunity of exchanging thoughts and ideas and of becoming better acquainted with one another. Again—the fact of being banded together in this work has broadened our ideas. We are brought face to face with the practical side of home life, and it has made us more liberal and tolerant of the methods of others.

The educational part of it cannot be too highly estimated. New ideas are received, helpful and excellent suggestions are given, and consequently there is more variety and interest in our duties. More attention is paid to the value and cooking of nourishing food. Houses are more conveniently arranged and better ventilated. The home-makers are more thoughtful, more capable, more self-reliant and more practical.

The outlook for our Institute is very promising. Its object appeals to every progressive woman. We have set our standard high and our motto for 1904 is "Advance."

MRS. S. R. BEWS, Secretary.

EAST HASTINGS.

The East Hastings Women's Institute was first organized by Miss Blanche Maddock, at Read, in March, 1901, with a membership of ten. As the work is becoming known the women realize the good it is doing and is destined to do in the future, and the Institute is gradually assuming healthy proportions.

For the year ending June, 1903, our membership was two hundred and three. We have every reason to hope that this growth will continue, and that the Branches already formed will strike deeper roots. At Spencer's, Tweed, Foxboro, and Melrose, the membership is not alone on paper. It is a live, practical, working membership, living up to the purpose of the organization, and holding fairly regular monthly meetings, with an average attendance of twenty persons.

The movement has been cordially received in every part of our county, and the people—with the exception of a few who say they know more than is written in the books sent—are very enthusiastic while the delegates are present, but we find the interest soon dies away, and there is no advance or steady development without persistent effort on the part of local officers. The women, so accustomed to staying in the house, are slow to come out, but where the directors persist in appointing a certain day of each month for a meeting, success soon comes. The women are beginning to realize that the Institute meeting means a chance to forget their daily burdens for a while in the society of their neighbors, and to regard our social condition as susceptable of great improvement. What we know is as nothing to what we might know, if we would but escape from ourselves, look around and exchange ideas with each other for economizing our efforts and learning the true art of living. As each one is awakened new purposes are formed that make the meeting interesting. The awakening of so many tired women, who have grown accustomed to "living to work" instead of "working to live", to the fact that they were not designed exclusively to drudge—that it is no sin to increase the happy moments of any life, her own included—is one of the greatest benefits derived from the Women's Institute.

For holding summer meetings June seems to be the month most in favor.

As the dues are very slight we find the question or difficulty of disposing of funds easily solved. For some of our Branches we subscribed for

magazines, with a view to having them passed to every member, but in no case was this altogether satisfactory. Some were unquestionably benefited, while others rarely, if ever, received a book.

MARY A. HANLEY.

EAST HURON.

Our Women's Institute was organized in January, 1902. We started with a membership of seven, while at the present time we have one hundred and eighty-four members.

We have four Branch Institutes, namely: Fordwich, Bluevale, Molesworth and Ethel. Wroxeter found they could not keep up their Branch, but we have eight members in that neighborhood. We have also members at Constance and Gorrie, making in all a total of one hundred and ninety at the end of 1903.

In the East Huron Institute we are just starting a library.

We dispose of our funds in hiring halls for meetings, Secretary's salary, printing, advertising, postage, and the defraying of delegates' expenses for summer meetings.

The principal hindrance we find is the scarcity of literature during the last year. This makes the members dissatisfied, as many think they are not receiving anything substantial for their fee. I am afraid that if we do not receive any literature before the end of the year our membership will fall off materially.

We think June the most suitable time for holding summer meetings.

Our members say they have derived much benefit simply by meeting together at our monthly meetings and exchanging ideas. We often receive much information through the use of the Question Drawer. Then, the hour spent in this social way once a month, brightens the busy mother and housewife.

The outlook is bright and we are looking forward to a prosperous future.

MRS. JAMES ARMSTRONG, Secretary.

SOUTH HURON.

The Women's Institute of South Huron was organized on the 9th of January, 1903, with headquarters at Exeter. We organized with a membership of five. We have now fifty-three members, and two Branch Institutes, one at Hensall and one at Bayfield. Hensall has not reported, but the Bayfield Branch is very much interested in the work, and will no doubt make much progress in the next year.

As an Institute we have not taken any literature, but several of the members are taking "Canadian Good Housekeeping" and the "Home Science Magazine."

We have spent our funds in securing demonstrators and in advertising the meetings. We also had a trained nurse from Toledo address our Institute, which was very instructive.

October is thought to be the best month to hold an open series of meetings.

Among the benefits of the Institute may be mentioned the opportunity we have of meeting with people which would not otherwise be possible; new ideas as to the doing of our daily work, and the many helpful talks along all lines of work in connection with the home.

The meetings during the past year have been helpful and thoroughly enjoyed by all, and we hope to increase our membership through the coming year.

MRS. A. HASTINGS, Secretary.

West Huron.

The West Huron Women's Institute was organized on February 6th, 1901, by Mrs. Colin Campbell. Twenty-seven members were enrolled at our first meeting, and now we have ninety-three.

We have five Branch Institutes in our district—Goderich, Wingham, Auburn, Benmiller and Holmesville.

Several copies of periodicals such as "Good Housekeeping" and "Home Science Magazine," are subscribed for by the Institute and distributed at the monthly meetings.

The balance of our funds are used to defray expenses of meetings held at the different Branch Institutes.

The month of June we consider the most suitable time for holding summer meetings.

We have been benefited mutually, socially and intellectually by the literature received, papers read, addresses and demonstrations given at the Institute meetings.

The outlook for the future is very encouraging.

Mrs. Colin Campbell, Secretary.

Lennox.

It gives me great pleasure to submit the following report. The history of our organization is a brief one. We organized in the spring of 1901, with only thirteen members. Very little interest was evinced and meetings were held once in three months. In 1902, we began meeting monthly, from house to house. Refreshments were always served. The attendance was somewhat better, but many of our neighbors were hostile and would not join us, complaining of the elaborate menu given by some where we met. Therefore, our Institute passed a resolution abolishing everything in the line of dainties and refreshments were restricted to sandwiches and tea or coffee, which gave all an opportunity to join, at least as far as that argument was concerned.

Our aim has been to discuss practical subjects in home life, and considerable emphasis was laid upon the writing of essays on such subjects, two or three being read at each meeting. The marked improvement that has taken place is very gratifying. Our plans have been a very efficient means of education in drawing out and developing dormant talent. We are finding that science and practice go hand in hand where progress is made. A higher ideal and broader and more cheerful view of life has been attained and a halo of interest has been shown to surround it. We find it helpful to gather socially, to wish each other well and to acknowledge the indissoluble connection of our interests as farmers' wives. We have had peace, progress and harmony all along, and as our Institute has grown in the confidence of our neighbors, the members are helping with more zeal and energy. We number fifty-three at the present time.

We have bought some cook books and are taking seven different periodicals, which are distributed among the members.

We were all delighted with the lectures and demonstrations given by the lady delegates last July, which were fairly well attended by outsiders. The sentiment expressed by visitors was one of genuine respect for the Institute, which gave us quite a lift.

Either June or July would be the most suitable time for holding summer meetings in Lennox.

We are much pleased to report that we have received a grant from the County Council and also from the Ontario Government. We need a library and are using some of this money to buy a few books towards that object.

We hope to achieve great results from a concert to be held in the near future. Our motto is "Excelsior."

Mrs. W. S. Duffett, President.

Lincoln.

Our Institute was organized on the 27th of February, 1901, the District Officers being located at Campden.

The number of members for 1903 is eighty-one.

There are no Branch Institutes as yet, although meetings have been held at various places in the townships of Grimsby, Clinton and Louth. We have members in all these townships, but they hesitate to take the responsibility of running a Branch Institute.

Some of the funds are used in purchasing a number of books pertaining to Domestic Science, and these have been circulated as well as possible among the members. This, however, has not proved very satisfactory. We have also used a portion of our receipts to defray expense of meeting in different places.

I think the greatest hindrance to the growth of our work is the lack of willing workers to make the meetings interesting; the work generally falling upon a few who are willing to take part. Another hindrance is a lack of proper methods of securing members. We depended this year upon the summer meetings, at which the attendance proved to be small. Still another hindrance is the lack of Government literature this year. Many members pay their fee that they may receive the literature, as they are not able to attend the meetings.

The most suitable time for holding meetings in our locality is between the 24th of May and the middle of June. Later the fruit season begins and lasts until November.

The benefits derived from the meetings are principally that women are learning to devise methods of lessesing labor. Also more attention is given to proper methods of cooking food to secure the most nutritive value. Ladies meet together oftener and exchange ideas, which foster a friendliness that renders life more pleasant. Many a hint thrown out at these meetings, turns drudgery into a pleasure, because we have learned to understand the reasons for doing many things. A love for reading is cultivated by the distribution of literature, and this is indeed a great benefit.

Mrs. E. W. Fry, Secretary.

North Middlesex.

The North Middlesex Women's Institute was organized on July 25th, 1903, by Misses Reynolds and Hunter, commencing with a membership of ten.

At the end of November we have thirty-one members, and seven meetings have been held in the homes of members.

No branch Institutes have yet been organized.

Some pamphlets from Washington and Toronto have been distributed among our members, but we have so far reserved our funds to pay the expenses of a speaker in the near future. We also hope to procure some books and magazines shortly.

Lack of time and opportunity to go the distance often necessary in rural districts is a hindrance to spreading the work. It also seems to be somewhat difficult to get many interested outside of certain "sets."

We believe that benefit is derived in meeting together in a social way, and exchanging ideas in reference to doing our work.

The outlook for the future appears to be encouraging.

MABEL H. ZAVITZ, Secretary.

MONCK.

Our Institute was organized on March 18th, 1902, by Miss Blanche Maddock, who accompanied the delegates of the Farmers' Institutes. The ladies at the meeting were very much interested in the papers given by Miss Maddock on Bread and Butter-making. She had no trouble whatever in forming an Institute, with a membership of thirteen, with Mrs. Campbell, (our present delegate to Guelph) as President, which office she filled in a very able manner.

Our membership has increased to forty-four, and we have one Branch Institute at Winger.

We have had demonstrations by Miss Smith, Miss Hunter and Miss Fisher, and "Home Talk" from Mrs. Kinney.

Under the heading of "Hindrances" we may state that we have not received literature this year, although reports were received last year. We also find difficulty in getting the members to take part in the meetings.

The most suitable time for holding summer meetings in our district would be in September.

The greatest benefits we derive from the Institute is the social intercourse which is made possible, as we all feel like one united family. We meet the first Tuesday in each month.

The outlook for the future is good.

MRS. JOSEPH BULNING, Secretary.

EAST NORTHUMBERLAND.

Our Institute was organized by Mr. G. C. Creelman, in June, 1901.

We have ninety-five members.

We have a Branch Institute at Brighton, with some sixteen members: this was organized by Miss Agnes Smith, in July, 1903.

We have no library, but have subscribed for several copies of "Good Housekeeping" and now some twenty-six members of the Institute take the paper.

Referring to the work of the Association I think we may congratulate ourselves on the work that has been achieved. We have held twenty meetings during the past year, viz., eleven at Murray, five at Wooler, three at Brighton, one at Warkworth (with an audience of eight hundred and fifty-five women), the average attendance being forty-three.

We have not met with any special hindrance in our work, but the Institute seems to be on the high road to success.

Would think the first two weeks in June by far the best time to hold our summer meetings.

The question as to the benefits derived from the Institute, is a broad one, as in our Institute we think the benefits are many and varied. The social side of the work is one of its greatest blessings. We meet our neighbors, not with a formal nod as formerly, but with a friendly greeting.

The aim of the Institute for the past year has been to stimulate throughout the district an interest in the highest Institution on earth -the home-- and the outlook is very bright.

MRS. J. WELLINGTON CREWS, Secretary.

WEST NORTHUMBERLAND.

West Northumberland Institute was organized on January 22nd, 1901.

Our membership for 1903 is seventy-two.

There are no Branch Institutes in our district, neither have we a library. Some members subscribed to "Canadian Good Housekeeping" after seeing the sample copies supplied to the Secretary.

The funds of the Institute have been disposed of in paying the expenses of delegates, postage, stationery, advertising, badges for members, salary and travelling expenses of the Secretary.

The hindrances we meet with are indifference on the part of the women, and the number of other societies already organized in the district.

July and August would be the best time for summer meetings.

The benefits derived are, friendly intercourse, and a knowledge of improved methods of housekeeping and home-making.

We do not see any reasonable prospect of much change in the present conditions.

MRS. JAMES DAVIDSON, Secretary.

NORTH NORFOLK.

The North Norfolk Institute was organized in January, 1902, by Miss Blanche Maddock.

We have ninety-eight members for 1903.

There are two Branch Institutes, Simcoe, organized in February, and Port Dover, organized in June, 1903.

The library is limited. We subscribe for two copies of "Canadian Good Housekeeping" and "McCall's Magazine."

The funds are used to pay expenses of meetings, delegates' expenses postage, stationery, etc.

The chief hindrance in spreading the work is lack of interest, so that those who have not joined the Institute will not attend the meetings.

June would be the best time with us for holding summer meetings.

The benefits derived are the ideas we get from the papers and addresses given at the meetings.

The outlook for the future is encouraging, if the right officers are elected to carry on the work.

MRS. SAFFORD KITCHEN, Secretary.

NORTH ONTARIO.

Organized in November, 1900, by Miss Laura Rose.

Our membership for 1903 is seventy-seven.

We have no Branch Institutes, but have a small library.

We use our funds in employing outside speakers and demonstrators, rent for hall, printing, postage, etc.

During our career we have met with no particular hindrances.

June would be the best time for holding summer meetings.

The Institute helps to make women more sociable, and by exchanging ideas and experiences in reference to domestic work, we acquire better methods of managing the home and of doing our work.

The outlook for the future is very encouraging.

MRS. C. S. GOODRICH, Secretary.

South Ontario.

South Ontario Institute sends greetings to her sister societies.

In reviewing the past four years, since the organization of the Institute in 1899, with a membership of twenty-three to begin with, I think I can safely say that the years have marked progress. The membership at the present time is one hundred and twenty-three. The meetings throughout the past have been helpful, inspiring and enthusiastic. Mr. Creelman has sent us very able speakers from time to time, in the persons of Misses Rose, Maddock, Linton, Millar, Smith and Morgan, who gave demonstrations in cooking, etc. We have also had Mrs. Colin Campbell, who delighted us with her lectures on various "home" subjects, much to our benefit.

The Institute members availed themselves of the opportunity of attending demonstrations at the Whitby Ladies' College, on two occasions, through the kindness of Dr. and Mrs. Hare. These demonstrations were thoroughly appreciated by all our members who were there.

We have also had "At Homes" and "Picnics" at different periods, which have kindled a friendly feeling among the people of South Ontario, and still there is plenty of room for advancement, as we feel that we have only touched the border. However, we intend to go on and "possess the land," as we know that "head and hands form the unit of perfect labor."

Our district officers are located at Whitby, and we have Branch Institutes at Brooklin, Columbus, Myrtle and Greenbank.

Our library consists of a dozen volumes, with two or three magazines.

We find the most suitable time for summer meetings is in May or June.

The outlook for the future is bright and promising, and we are hoping for great success in 1904.

Mrs. A. P. Annis, Secretary.

South Oxford.

The South Oxford Women's Institute was organized in January, 1903, by Miss Ida Hunter, of Toronto. We started with a membership of one hundred and fifty-four, and have since increased to two hundred and twenty-three. This membership includes three Branches, which are located at Springford, Brownsville and Mount Elgin.

We have no library and have distributed no periodicals, except those sent to the members by the Superintendent.

Our expenditure for the year has been only for supplementary meetings in July, hall rents, postal cards, etc.

Summer is generally our busy time, and it is often difficult to get a horse, yet there is a time about the last of June that is not as busy, and the meetings could be made a success.

At our meetings we aim to secure topics of interest, and have tried to find the most successful way of doing many necessary things. Our meetings seem to be interesting, and in fact have set us thinking about how we ought to live.

We hope for great things for the future, as we have an increase of interest in the work of the Women's Institute.

May Emigh, Secretary.

Peel.

The Peel Institute was organized on January 12th, 1901. From a very small and weak beginning, we have grown to be a society of some importance. We have reached out and gathered a membership from all parts of the county, and for 1903 our books show a membership of one hundred and eighty-two.

The officers of the Main Institute are at Brampton, while we have Branch Institutes at Alton and Cooksville. The former Branch is in a very flourishing condition.

We subscribe for three magazines, viz., "Good Housekeeping" "Home Science Magazine," and "Farming World."

The funds are used to defray expenses of meetings and to employ suitable persons to address meetings.

During the past summer we had six meetings in July. They were not a success. In the warm weather we found that the town and village people would not go to the meetings, and the country people were too busy. In our county we do not want summer meetings, unless we could have them in June.

The following are some of the benefits received:

(1) The bringing together of town and country women, thereby making them more sociable. (2) The development of confidence in timid women, who were very much backward about taking part in the programmes. (3) The broadening of our ideas by exchange of thought and experience. (4) Added interest in our everyday work, on account of the way in which its importance has been emphasized.

While there have been discouragements in carrying on the work, taken as a whole it has been pleasant and profitable. We trust that the year 1904 may be even more successful than any year in the past, and that ere long we may have at least half the women in our county on our membership list. This is the standard we have set for ourselves, and by working hard we hope to attain it.

ETHEL M. HEWSON, Secretary.

SOUTH PERTH.

The Women's Institute of South Perth was organzied at Tavistock in March, 1902.

We have now eighty-five members, and two Branch Institutes, one at Kirkton and the other at Staffa.

We have subscribed for one periodical only.

We have expended our funds in paying expenses of delegates, advertising meetings, postage, etc.

The hindrances met with in spreading the work are indifference and a misconception of the true value of the Institute, and also the timidity of members in giving expression to their experiences for the benefit of others.

Best time for summer meetings—June or September.

Some of the benefits derived from the Institute are a better knowledge of the value of well-cooked food, and increased sociability.

We are looking forward to a profitable new year.

HATTIE L. BAKER, Secretary.

WEST PETERBORO.

This Institute was organized in Lakefield in 1901.

The membership for 1903 is sixty-five.

In October, 1903, a Branch Institute was organized at Warsaw, and it is flourishing, and the membership growing.

Our Institute takes the following periodicals: "Woman's Monthly Magazine," "Home Science Magazine," and the "Farm Journal."

Our funds are disposed of by paying for hall and for speakers. The Institute has also decided to remunerate the Secretary for her work by paying her ten dollars, but this has not yet been done. West Peterboro Institute sent a delegate last year to the Guelph Convention and one this year, 1903.

One of the chief difficulties met with was to get our ladies to freely discuss the subjects chosen for the meetings. Interest flagged on this account, but we are gradually improving in this respect and we find that as interest increases it has a corresponding effect on the membership.

We hold regular monthly meetings all through the summer, and find it an improvement on dropping the work for two or three months, as in the latter case it is very hard to get the ladies together again. We held our special meeting in July, and enjoyed Miss Mongan's and Mrs. Campbell's discourses. The meeting was in every way a decided success.

One of the chief benefits of our Institute work has been seen in the breaking down of denominational stiffness, and promoting sociability. The good derived along the line of good housekeeping has been great.

The future of our Institute is very bright. The members are very enthusiastic over our work, and the prospects for 1904 are very encouraging.

MRS. G. FITZGERALD, Secretary.

SOUTH SIMCOE.

(1) Organized in June, 1901.
(2) Members for 1903—seventy-eight.
(3) Branch Institutes. Bond Head, Thornton and Churchill.
(4) Library consists of about twelve books and magazines.
(5) Last year we spent our money in secretary's salary, sending two delegates to Guelph, postage, stationery, etc.
(6) The hindrances we meet. Lack of interest, and difficulty in getting ladies to prepare papers.
(7) Last summer we did not hold any, as many of our members were away camping, and the farmers' wives seemed too busy to attend.
(8) We have had some good papers, and have found out new ways of doing our work, through learning the opinions and methods of other members.
(9) The outlook appears bright at present. We would like some useful hints to enable us to make meetings more interesting.

MRS. ORLANDO LEWIS, Secretary.

UNION.

The Union Women's Institute was organized at Clifford, in January, 1901.

Our membership for 1903 is eighty.

We subscribe for twenty of the best periodicals.

Our expenses consist of hall rent, expenses of speakers and of holding meetings at different parts of the district, salary of the secretary, also of our librarian.

Our worst hindrance is the feeling of incompetency to carry on the work of organizing Branch Institutes.

We think the latter part of August is the best time to hold summer meetings.

We have found that the exchange of ideas in the discussion of papers, etc., also the information gleaned from the periodicals, have been beneficial.

The outlook for the future is very encouraging, as the interest in the work is deepening.

FANNIE FRASER, Secretary.

EAST VICTORIA.

(1) Organized December, 1901.
(2) Members for 1903 is ninety-four.

(3) Branch Institutes have been organized at Bobcaygeon, Omemee, Dunsford and Cambray.

(4) We have fifteen volumes in our library.

(5) Expenditure. Printing, advertising, badges, rent of halls.

(6) The difficulty in reaching different points, owing to the number of lakes.

(7) June.

(8) The Institute attracts the class of women who are inclined to stay at home too much for their own good, both of body and mind. The interchange of ideas, and the meeting together of the women of the country and town, tend to the broadening of the views of both.

(9) The prospects are brighter, as the objects of the Institute are better understood.

E. R. Cullis, Secretary.

West Victoria.

Date of organization, March 24th, 1903.

To the end of November, 1903, we have eighty-one members.

There are three Branch Institutes, viz.

Woodville, organized September 1st, 1903.
Little Britain, organized September 17th, 1903.
Oakwood, organized November 24th, 1903.

We have not yet a library, nor have we subscribed for any periodicals.

Funds are used to pay expenses of delegates, rent of halls, printing and advertising, and the expenses incident to organization.

We have not met with any hindrances in spreading the work, except that in large places the ladies feel that they have all the meetings they can attend.

Last of June is the most suitable time for summer meetings.

Some of the benefits derived from the Institute: The whole work is an educator, developing local talent, and not the least important part is the social aspect of the work in bringing the ladies of the country and town together, also interesting ladies whose work was formerly confined almost entirely to their own particular church.

The outlook is good. Much interest is taken in the work, and people are asking what it is all about and expressing their approval and desire to join us.

Mrs. D. C. Trew, Secretary.

North Waterloo.

North Waterloo Institute was organized at Winterbourne, in the township of Woolwich, on February 15th, 1902, by Miss Laura Rose, of Guelph. We commenced with a membership of thirty-five, but have grown until for 1903 our membership is one hundred and forty-seven.

We have a Branch Institute at Waterloo and another at Wellesley.

With our funds, which we still have on hand, we purpose having a library, and distributing useful periodicals among our members. We thought of buying utensils for demonstrations, so that the delegates might not be put to the trouble of bringing an outfit with them, but most of the ladies are in favor of the library.

Regarding the progress of our work, I think the want of confidence to speak in public is the general difficulty. It is not that our members lack in intelligence, but it is the inability to express ourselves in public that we seem to feel. At Winterbourne we have had excellent papers on everything pertaining to Household Science, both domestic and intellectual, and all seem willing to do their utmost to make the meetings a success.

Now, a little about the most suitable time for holding summer meetings. I think we will all agree that July is about as convenient and certainly as pleasant a month as we could hold our gatherings in. Another idea is that we are more likely to get a horse at that season. Earlier in the season it is plowing, sowing, harrowing, hauling manure, drilling, etc., and later comes haying, harvesting, threshing, fall plowing, etc., so that July seems to come "between times."

When speaking of the benefits of the Institute, I hardly know where to commence. I might mention the knowledge we receive from the instruction of the clever delegates, and the pleasant intercourse we have with friends, which we would not otherwise see from one year's end to the other. I feel that a great many tired "stay-at-home" women come to our meetings and go home full of new ideas and pleasant thoughts, thereby enabling them to resume more cheerfully the daily routine of work.

Regarding the outlook for the future, I trust the interest displayed by the members in the past, and the indefatigable efforts of our Secretary, Miss McDougall, may be a guarantee for the success of the North Waterloo Women's Institute.

MRS. ANDREW BROWN, President.

SOUTH WATERLOO.

On the afternoon of Monday, June 8th, 1903, a number of ladies attended the annual meeting of the South Waterloo Farmers' Institute, and what is now South Waterloo Women's Institute was organized by Miss Agnes Smith.

Our membership for 1903 is one hundred and four.

Since then the Institute has been alive to the interests of the women of the district. We held a large picnic in June, at which over a hundred ladies were present. It is the intention of the officers to make the picnic an annual outing, in which the gentlemen will participate.

In October a display of work by members of the South Waterloo Women's Institute, was on exhibition at the Galt Fall Fair, and it was a surprise to note the difference and well-done work displayed, and we feel safe in saying it was not half what the members of our organization are capable of doing. Large carrots were shown, well-mended bags, fruits, bread, butter, jellies, cakes, cheese, shawls, slippers, embroidery, and, as they say on auction sale bills, "other articles too numerous to mention" were there. After the close of the Fair, a number of the goodies were presented to the Galt General Hospital, where they were gladly received.

At the same Fair the Institute offered a prize of $5.00 for the best display of home-made baking—$3.00, 1st prize; $2.00, 2nd prize. The condition attached to the receiving of this prize was that the winner should contribute a paper on "Baking" at one of the Institute meetings. The winner of the first prize gave her paper at the October meeting in Galt. Next year we purpose enlarging along this line.

We have not organized any Branch Institute, and we are hardly deep enough in the work to have a library, though we believe a great deal of good may be accomplished by circulating helpful books and periodicals.

Hindrances are as yet unknown to the South Waterloo Women's Institute. The members are active, willing, progressive women, who have for the head of the organization, a bright, enthusiastic President, all working together "with a view to raising the general standard and morals of our people."

We think that June or September would be the best time to hold summer meetings.

The benefits derived from the Institute are many. Sociability is encouraged, ideas exchanged, the young learn many useful lessons from the old, and the old keep youthful by coming in contact with the young. We attend our meetings to learn, and certainly our ignorance is made very apparent to ourselves—though we may pride ourselves others do not see it.

Our outlook for the future is bright, we might say brilliant. If we had not anything else in view excepting these conventions, would not these alone be worth joining the Institute for? But this convention is only a stimulus to the outlook for the future. How could it help being bright, when we have a Superintendent that takes such an interest in our work, makes our tasks so light, and is always ready to promptly answer questions sent him by enquiring ones.

Mrs. Will Elliott, Secretary.

Welland.

The Welland County Women's Institute was organized on April 25th, 1901, commencing with a membership of twenty. For the year 1903 the membership is thirty-five.

As yet there have been no branches formed, although it has been proposed that one be formed at Stevensville.

As to the extent of our library, we have a small collection of bound books, and have also subscribed for several magazines each year. Those subscribed to are: "Home Science Magazine," "Vick's Family Magazine," and "Physical Culture Magazine."

The Institute has provided its members with badges and tickets at a cost of $3.75. The other ways the money has been expended are in the payment of lecturers' expenses, postage, stationery, etc.

There was a epidemic of scarlet fever in our locality last winter that put a stop to our meetings from November until May. Of course we had to make a fresh start, as a great many had lost interest.

The members found the month of July very convenient for the holding of summer meetings, and I think it will be as well if we can continue them in that month.

I think our Women's Institute has done us good in many ways. We find it a benefit socially, for at our monthly meetings we have an opportunity of meeting our friends and neighbors, which might not be possible otherwise. Also by taking part in the discussions we become accustomed to talking in public, without being nervous. The discussions also are a benefit, when each one tells what she has learned by her own experience. The demonstrations in cooking have been much appreciated by all. We try to make our meetings as interesting as possible, and as the interest among the members seems to be increasing, we hope to be able to report a greater progress in the work at the end of next year.

Myrtle Cauthard, Secretary.

South Wellington.

This Institute was organized on June 11th, 1903, and has now a membership of forty-seven.

We have three Branch Institutes, viz., Marden, Rockwood and Aberfoyle.

The Institute cannot yet boast of a library.

The funds of the Society are as yet untouched, and we have not planned for their expenditure, beyond paying the running expenses.

The hindrances to the progress of the work have been mainly—a lack of experience on the part of members, indifference on the part of some, unwillingness to take part in the meetings, a lack of interest in the use and workings of the Institute, arising chiefly from the fact that it is not under-

stood what benefits are to be derived from the organization. We hope, however, to prove to even the most skeptical that a real benefit may be derived from meeting together and discussing the problems which we all encounter in our every day routine.

The most suitable time for holding summer meetings we believe to be during the months of June or September, partly because it is slack time, and partly because we are surer of fine weather.

We do not claim any great benefits yet, the chief one being that we have brought before us the fact that no matter how efficient we may be, there is always room for improvement. Besides we are given an opportunity for meeting and thus creating a sociability amongst neighbors, otherwise impossible. Along with these we might mention one meeting addressed by Miss Maddock, her subject being "Bacteria," and one addressed by Miss Carter, whose subject was "The Sunny Side of Dairy Life." These addresses were very interesting and instructive. Previous to the organization of the Institute we had the pleasure of listening to an address on "Emergencies" by Miss Millar.

We hope that the coming year may show increased interest in and attendance at the meetings of our Institute.

ALICE WHITELAW, Secretary.

WEST WELLINGTON.

West Wellington Institute was organized on June 6th, 1903, with a membership of fifty-five, which has since been increased to one hundred and one.

We have organized two Branches at the extreme points of our district, so as to cover the largest portion of our territory. One Branch is at Glenallan and the other at Palmerston.

We have no library or periodicals yet. We have spent our money in holding meetings at different places, and in getting speakers for same, rent of halls, postage, stationery, etc.

One great hindrance has been lack of funds. We did not organize in time to secure the County grant for this year, so that it has taken most of our membership fees to pay the expenses of the July meetings. The Farmers' Institute grant was used to assist the Branches and to pay for advertising. The grant from the Government we used to hold a series of meetings at Drayton, Palmerston and Glenallan, and in sending a delegate to the Women's Institute Convention.

No literature coming from the Department made it very hard to secure new members. We have good talent in our Institute, but the difficulty we have met with is to get the members to realize the meetings are theirs, and until we can awaken the general membership to their responsibility, the greater part of the work will fall on the Department and upon the executive of the Institute.

The best time for holding summer meetings in our district, is from May 20th to June 20th.

One great benefit is the mingling together of all classes and the interchange of thought. It has helped to broaden our ideas, as well as increased our sphere of usefulness.

We are much encouraged from our six months' work, and are looking forward to greater things in the future, when we can reach the silent, plodding women with their buried ambitions, and help to brighten the lives and develop the abilities of their daughters as well as make all more worthy of so goodly a heritage as our own glorious Canada.

MRS. S. M. CLEMENS, President.

North Wentworth.

The North Wentworth Women's Institute was organized on February 19th, 1903, with a membership of one hundred and twelve.

We have three Branch Institutes, namely, Lynden, Westover, and West Flamboro.

Our funds have mostly been disposed of by hiring demonstrators, paying rent of halls, postage, etc.

There is no particular hindrance in the work. It seems to go along very smoothly.

The most suitable time for holding summer meetings we think to be in July, about the same time as last year.

Some of the benefits derived from the Institute are a more systematic method of housekeeping, bringing people together, and discussing different methods of work.

Our outlook for the future is very bright and hopeful.

Mrs. W. Wood, Secretary.

South Wentworth.

In reply to the questions asked in the programme for the Women's Institute Convention, I beg to report as follows:

The South Wentworth Institute was organized February 19th, 1897.

The membership for 1903 is one hundred and ninety-six.

We have three Branches, viz., Carluke, Jerseyville and Binbrook.

Our library is composed of the Chautaqua Reading Course, and a number of periodicals, which are supplied to members.

We have purchased a demonstrating outfit which is used at nearly every meeting and necessitates the expenditure of more or less money, which with our expenses in purchasing periodicals, delegates' expenses, cards, printing, advertising, hall rent, etc., has used up the funds at our disposal. We may say that we have been liberally treated by both our Township and County Councils in the way of grants. Our County Council gave us a grant of $20, and our Township Council $10, and I would like to impress very strongly upon my co-workers from other constituencies that it is our right to receive assistance from the sources which I have indicated, and I cannot understand why so many of our Institutes have failed to take advantage of it. I feel that we have a stronger claim upon the Township and County Councils than the Farmers' Institute, on account of our management being so much more expensive.

Among the many hindrances we meet with in spreading our work, we find a very strong apathy on the part of officers of the Farmers' Institutes in localities where an attempt is made to establish Branches. We also find prejudice in the minds of women against Women's Institutes, owing principally, we believe, to ignorance of our objects and aims, as the Institute is looked upon as merely a "Cooking School." We might also say that we find many women who think their own way the best, and do not like to be interfered with in their methods of doing their work, believing, as they do, that in following the example of their mothers and grandmothers they will not go far astray. Any attempt to revolutionize household methods is looked upon as an interference. Possibly one of our greatest difficulties is lack of funds in spreading the work of our organization. Our members feel they cannot well afford to meet the necessary expense in travelling from place to place, and the funds at our disposal are not necessary to meet these disbursements. I feel that we ought to make a united appeal to our worthy Superintendent, Mr. Creelman, to see if he cannot devise some method where-

by we can procure more assistance from the Government to help us in the laudable work we have undertaken.

We think the most suitable time for holding meetings is from the middle of June to the middle of July.

We consider the Institute of incalculable value. We are permitted to have an interchange of both thoughts and methods, and questions of vital importance to us in our homes are discussed from every possible standpoint. Our Institutes meet and dispel what has been long felt in rural life—the want of greater sociability on the part of even near neighbors. The better sanitation of our homes is becoming a burning question, also the relative value of different kinds of food, so as to give the most nourishment to the human system. We consider that training for domestic work should be classed among and looked upon as quite as important as any of the professions.

We consider the outlook for the future particularly bright, as shown by the wonderful progress made by the organization since its inception. Women everywhere are awakening to the necessity of a more thorough training for the work in the home, which training the Institute in part supplies.

M. E. Nash, Secretary. Mrs. F. M. Carpenter, Delegate.

East York.

East York Women's Institute was organized at Wexford on November 30th, 1900, by Miss Blanche Maddock. Twenty-two members were secured at the two meetings held at Wexford and Agincourt in connection with the meeting of the Farmers' Institute.

We now have a membership of nearly one hundred and fifty.

Ever since the organization we have continued to meet about every two weeks during the winter, and have held two or three meetings during the summer. We have three meeting-places in our neighborhood, viz., Wexford, Agincourt and Ellesmere, and have Branches formed at the following places: Thornhill, Box Grove, Unionville and Markham. These Branches are working well, and meet regularly, with the exception of Unionville. During our regular meetings this fall we organized a Branch at York Mills, with a membership of twelve. We found the best subjects to take up for discussion at first were the preparing and cooking of foods, as women have always been fond of exchanging recipes and discussing their merits, whenever they happen to meet socially. For this reason the members felt more at home with these subjects than with any others, and when they become accustomed to the sound of their own voice in public they will have won the battle.

We received this year besides the Government grant, ten dollars from the County Council and twenty dollars from the Farmers' Institute.

The Women's Institute meets at the same place as the Farmers' Institute, the farmers occupying the hall in the locality and the ladies meeting at a private house. We find the ladies much more sociable and much more inclined to come out when we meet in a private house. There is always some one to meet them at the door and welcome them.

We secured three books towards a library some three years ago, and last year subscribed for the "American Kitchen Magazine," and the "Canadian Horticulturist," but have done nothing further since. The members do not seem interested enough in literature along that line, to justify our subscribing for these magazines. I think it is a failing on the part of the women of our Institute. They will work, but do not do the thinking and reading they should.

The only hindrance I see in the spreading of the work, is too often lack of time on the part of the officers for propagation work, and in some Insti-

tutes lack of efficient officers, or at least improper persons in office. Then, too, many officers cannot afford the time when they receive little or no remuneration for it.

If the Annual Meeting could be held in May, then it would be much better to hold the summer meetings in June, or, probably the officers could be elected at the same time. July is an extremely busy and hot month, and I think the meetings would be much more successful if held in June than in July.

Some of the benefits received have been the drawing of isolated women outside of themselves, and the sociable part of the Institute has done much for a great number in our district. The discussions have started the members thinking on different lines of thought, and we hope in time to see all our members do more reading. The benefits are scarcely appreciated as yet, more than the enjoyment of coming together and the discussing of home subjects. Our members do not all realize what the Institute is really doing for them. The seed is being sown which will show fruitage later.

I think the Women's Institute has, perhaps, a more promising future than any organization which has yet come into existence, at least so far as the women of the country are concerned. There is no limit to the work. We may go on and on and see yet greater heights ahead of us. What affects the home affects the nation. As yet the Institutes have taken up little except the subject of "Foods." That was a suitable subject to start with, but we must go on from step to step. Why should we not study, think and work? Women should understand their own make up, physically, mentally and morally, and the Institute is the means at hand for their obtaining this knowledge. It seems as though many of our women are not ready for this yet, but it will come. If we could just get the idea of the Institute being a school, and the members of it being students, we should derive much more benefit therefrom. It will surely come, but it will take time.

LULU REYNOLDS, Secretary.

WEST YORK.

Our Institute was organized in June, 1901, by Miss Blanche Maddock.

We have now one hundred and nine members.

There are two Branch Institutes in West York, one at Maple and the other at Kleinburg, while the officers of the Main Institute are located at Weston. These two Branches have been established less than a year.

As yet we have no library, but have bonused the magazine known as "Canadian Good Housekeeping," and are able to give it to our members at a greatly reduced rate.

The other methods of disposing of our funds have been in paying expenses of demonstrators and assisting to organize the Branch Institutes.

The one great hindrance I find is in getting the women to attend the meetings. After they have been at one or two meetings it is all right, but farmers' wives do not seem interested enough to come out to the meetings, though in many cases their husbands have paid their fees.

June seems to be the best time for holding meetings.

I think the greatest benefit derived from the Institute is that it brings women together to talk over their household affairs, which means a great deal to every housekeeper. In these days when it is almost impossible to get help in the house, every little contrivance and labor-saving machine comes as a boon to the housekeeper. Also the present conditions require that we should have a knowledge of the value of foods.

The outlook for our Institute is very bright and full of possibilities, and we feel that it will fill a "long felt want."

HELEN J. GRUBBE, Secretary.

THE FARM HOME.

By Miss Martha Van Rensselaer, Cornell University, Ithaca, N.Y.

(Delivered at Ontario Agricultural and Experimental Union Meeting, December 7th, 1903.)

There is no doubt that everyone here to-night has some special interest in some farm home. I could ask for no better audience than one made up of representatives of the farm. It has rarely been my privilege to speak before an audience where there were so many young men and women who were probably from the farm home. In our own State across the line, it is a matter of regret to us that when we have a Farmers' Institute meeting, the older people are there, but not the young people. It seems to me it is a sign of good times here when we have young men and young women interested in gathering knowledge which will make them more successful in their work.

I asked a gentleman the other day what would keep the boys on the farm. He said: "Just as soon as the girls learn to stay on the farm." (Laughter.) If this is so, your Agricultural College is making a fine move in instituting a course for girls, where they will be instructed in such a way that they may take up farm home life from a professional standpoint, and not leave the farm, as many home girls do, after they are old enough to teach school, or become stenographers, or work in a factory. If the girls would keep the boys on the farm, I am not sure but we had better turn all our colleges into schools of domestic science.

I have often wondered what the farmer does when he thinks of selecting a farmer's wife. Those of you who have had experience perhaps know whether he says, "Anybody will do," or whether he sits down quietly and says, "Can she cook? Can she sew? Can she do the cleaning of the house? Can she do her own millinery and dressmaking? Can she take care of the family in case of sickness? Will she be a nurse to the neighborhood? Will she be a pillar in the church?" or whether he thinks, as many young men do, that any butterfly, if she is just the one who seems to suit him, can fit into his home. The banker lives in the village, and his wife has only to go to the baker round the corner for her bread; she may call in her dressmaker; she may send for a physican on five minutes notice; there is something to meet every emergency. But the farmer's wife has to be a different sort of a woman. Yet, at the same time, we hear people say, "She married a farmer," as though she needed to be apologized for; but she, the all-round, intelligent, bright, capable woman, if she is doing her work on the farm well, need never be apologized for. She who gets up a good dinner (and we all know what it is to go into the country and get a good, square meal), and is ready when the children come in from school to meet them, and when the men come in and say they must have dinner "right straight"—and it is usually dinner for ten or twelve—she who has been at work since five in the morning must be prepared to preside at table with ease, and keep things going smoothly—she who can do all this has no need to be apologized for. The woman who went to school with her and has married a lawyer or someone else than a farmer, and thinks that because she lives in the village she is more intelligent and more progressive, because she has an opportunity of going to ten clubs in the week; shall we compare them?—simply because one is working along one line and another along another line, and one doing that part of the world's work which contributes to the happiness of men and women? We must give honor to her who is presiding in that home as a genius. There is honor to her for other reasons: she is the mother of that

boy who, when he had gone through the rural school, went away from home and went into the High School and the College, and was a little awkward and hard to manage, and did not like taking notes, and could not read in public; he was somewhat awkward in these lines, but not in practical affairs. Awkward, did I say? But did you ever see a city boy in the country? Did you ever see him try to milk a cow? Did you speak of him as being awkward? Perhaps he does know what to do with his hands in the reception-room, but when he tries to saw wood, or harness a horse, or milk a cow, what then? It is these awkward boys and girls who are making their mark in the world. I am proud of the fact that the boys and girls who come from the farm home are those who are making a success in the world; they are the boys and girls who are men and women occupying high places in the professions and in the commercial world. They know the value of time; the value of a dollar; they have integrity; they have a certain ruggedness and strength that comes from work, that comes, perhaps, too, from being in contact with nature. The man who is bringing up his boys in the city, looks with regret on the fact that he has no means of teaching those boys how to use their hands. Perhaps he may let them keep a few bantams in the small back yard. That is their knowledge of practical affairs; and the father looks with envy on the farm, where there is plenty of fresh air, the free life, and plenty of exercise. The farm home is therefore extremely important in that it is breeding up a lot of boys and girls who are to move things along the lines of civilization and strength. Therefore, we ought not to class women as farmers' wives and other wives; we ought not to think that because they are more isolated they are behind the times. They do get into a rut; there is danger of that if you have to get up at five o'clock in the morning and keep it up all day. But we must look beyond the menial toil to something higher, such as books, music and nature. The progressive farm homes are where the newspapers and magazines go; where they have a piano, and where it is the custom of the entire family to enjoy an entertainment now and then, and where it is the custom for people to go and come; where the mother lets the family know what she is reading, and keeping abreast of the times, and keeping up with her boys and girls. We believe that every man and woman on the farm should keep a little ahead of the boys and girls. You may send them to College, but every time they come home they should look up to the father and mother as leaders who can advise them. For that reason we believe in the extension of knowledge in the farm home; for that reason you have instituted work which will extend throughout the rural districts, such as the Farmers' Institutes. It is perhaps expected that I shall tell you something of the work we are trying to do along this line. We look with envy upon you sometimes because of the progress you are making in women's work in the farm homes. You are in advance of us in that respect; nevertheless, perhaps you will enjoy knowing something of our work among the farmers' wives.

We have, first, the Farmers' Reading Course and the Nature Course for Children. But this left the farm home women to be instructed. Some said, "She does not want to be instructed"; or "She will not take it kindly." But did she? A circular letter was sent out, and at once thousands of replies came in, saying that they wanted a parallel course to their husbands; that they wanted to learn of more satisfactory ways of managing the home. We found it was not so much that they wanted recipes, as to know that somebody was in sympathy with them—that someone still recognized them as in the line of progress, although they had left school and were on the farm, and away from people to some extent. That was the beginning of the work. To-day between 16,000 and 18,000 women in the State of New York are taking the parallel course with the farmers. You go to the Col-

lege, some of you, but it is a good thing to let the college go to the homes.

We also encourage the women on the farms to write to us and tell us about their difficulties and perplexities. Many of the writers are discouraged and downhearted and tired of the continual drudgery of their lives. It often does them good merely to have an opportunity of telling their troubles to somebody. We reply to them all and endeavor to extend sympathy and help.. Correspondence of this kind has been going on for three years. Do you wonder that there is an immense amount of interest in connection with that work in the farm homes? You know that home so well and know its possibilities for happiness; you know that the advantages there are ideal if profited by, that there is no better place on earth if the right conditions can be secured. I cannot resist saying before so many young men that I know of no occupation in the world where men and women are such close partners in business as in farm life. The farm and the home cannot be separated. Many of you are students here, and know that at home there are those who are sacrificing much to give you the advantage you derive from an institution like this. They have great hopes of you, and are willing to do all they can to give you better opportunities than they have had. I believe that is a part of your education. It is necessary for you to feel that when you have a farm home of your own you will elevate that home to such a plane that the whole world will look upon it as the happiest place that can be found, and that when you take a woman to that home and dignify her as a farmer's wife, you cannot do better than study in every way possible to make farm life so easy for her that she will feel that work is not drudgery, but that the farm home is the best place for her and for you.

HOME MAKING.

By Mrs. Adda F. Howie, Elm Grove, Wis.

(Delivered at the annual meeting of the Western Dairymen's Association held at St. Thomas, January, 1904.)

For many years we have had Farmers' Institutes, and have, with more or less profit, discussed the most desirable methods of breeding and rearing live stock; the best way to plant, cultivate and harvest various crops; and numerous other subjects of interest and value to our line of work. But during all this time only an occasional talk meagrely bearing upon that most important topic of farm life, has been heard. Now it seems to me that the farm is the ideal spot on which to build a home, just as the broad, spreading elm, oak or maple is the most fitting place for nestling birds. And, while I might speak enthusiastically of the poetical and artistic side of farm life, I have no wish to dwell on these phases, because I sincerely believe that if we give careful thought and attention to the little practical things that have so weighty an influence on the happiness and comfort of our loved ones, the aesthetic features will soon follow, on the same principle as "look after the pennies and the dollars will take care of themselves."

Not Enough Sentiment.

It is an undeniable fact that the most of us put too much labor and not enough sentiment into our lives. We look upon endearing words and gentle, thoughtful courtesies used in the family circle as superfluous to everyday life and practice; when, if rightly applied, they prove a healing balm for tired bodies as well as bruised hearts. We count our cattle and reckon their money value before we consider their keeping and development as a sacred trust. We measure our grand old forest trees by the cord, and coolly estimate

the gain by their ruthless destruction, rather than bend our heads in awe before the mysteries of Nature's greatness. Familiarity has bred contempt, and one of the finest attributes of human nature, that of appreciation, has been starved and dwarfed by a surfeit of blessing.

In passing through the country one may see from the car window many a weather-beaten farm house, with not a tree, a vine or shrub to mark it as a house of refined interested people. The door yard will be untidy and littered with unsightly objects; the out-buildings filthy, and the cattle scrawny and wild-eyed; farm implements carelessly left unprotected from sun and rain in field or yard. Can one wonder that such a picture does not prove alluring, and that such a dwelling passes for no more than a shelter, even to a farm-born generation, whose tendency to discontent is frequently encouraged, rather than uprooted, by the methods and teachings of slovenly, short-sighted parents.

How to Keep the Boys on the Farm.

A pathetic wail has gone forth throughout the length and breadth of the land. "What can we do to keep the boys on the farm?" Before attempting to answer, may I ask what have we ever done to make life congenial and attractive to our young people? Have they ever heard aught from us of a laudatory nature concerning our calling? Have not we farmers placed a stigma on our own occupation by holding up the defects instead of the praiseworthy qualities, by impressing upon the young minds the idea that farm life and labor was degrading; that there was neither profit nor satisfaction in the business, and that in the nearby or distant city could be found more respectable and attractive modes of earning competence? Yes, we have woefully belittled our own calling in an attempt to magnify the greatness of others. In a maudlin self-abnegation we have said to our children: "Our lives have necessarily been ones of self-denial and drudgery. We still work our fingers to the bone that you, who are too good for this labor, may have the advantages of a broader education. John shall be a lawyer, a doctor or merchant, and, with good clothes and polished manners, occupy a higher position in the esteem of his fellow men."

In planning for an ennobling mental and physical development, why not educate John in the same line of business his father has followed? Let him go forth and study the improved methods of agriculture, that, with his practical training and newly acquired knowledge, he may help the old farm to keep pace with modern science and skill. Teach him there is no more dignified, honorable or wholesome way of earning a livelihood than by forming a partnership with the forces of Nature. Do not hold up before his young eyes the almighty dollar as a scale by which to measure the length and breadth of success. Impress upon his youthful mind that the results of conscientious thought and toil will daily gain force and influence, while the minted coin diminishes in value by constant circulation.

Mary shall be given accomplishments. She shall be taught music, painting and art-needlework, in order to make her so attractive that she may marry well. What is the meaning of marrying well? Is it to give our daughter to the dissipated son of some rich man, who is eagerly waiting for his father's death that he may spend in riotous living the money accumulated in a lifetime of labor; that by neglect and indifference he may break her heart and ruin her life?

An Old Precept.

Is it for this that we toil and save and scheme? When a little girl I used to diligently copy after a form written by my teacher. "Be good and

you will be happy." No doubt many mothers and fathers schooled in that day faithfully traced the same lines, and, do you know, I believe it is owing to that sentiment that we have made this great mistake. We thought if we sent our children to Church and Sunday School, if we prayed over them, and devoted our lives to what we believed to be their best intersts, we were carefully following out instructions of our early training, and we never questioned the wisdom of the motto that to us had become a law. And yet, it was a big mistake. What should have been written is, "Be useful and you will be happy." That is a sentiment we may safely hand down through the ages.

The Dignity of Labor.

Let us teach our children by both precent and example the true dignity of labor. Let us teach them that no honest work is degrading, that the only disgrace is the manner in which it is performed. Let us teach them to love and revere the farm and the farm life; that their hearts should ever be filled with gratitude to God that He has given them broad acres rather than a tiny patch of ground; that He has entrusted His lowly creatures to their care, and that they may with earnest solicitude study so well the requirements of this great trust that when an accounting shall be called for the response will eagerly be:

Here are the talents, Lord, Thou gavest me,
Not idly hidden in the earth away,
But scattered o'er the broad and sun-flecked lea
To grow in Beauty's strength from day to day.
These soft-eyed kine entrusted to my care
To lead with love, not by the flaming sword,
I bring with faith that Thou wilt deem them fair,
All, all are thine, and I Thy herdsman, Lord.

A Wrong Standard Set up.

Either by design or unconsciously we have held up a wrong standard for our loved ones to follow. We have taught them to regard money and position above character and worth. We, weak, foolish, and ambitious mothers, in our desire to uplift our daughters in the esteem of a frivolous society, have stamped upon their childish, impressionable minds the belief that the practical duties of home-making, the things that represent so much in the welfare and comfort of our dear ones, are beneath the best efforts of an intelligent and self-respecting woman.

Woman's Divine Mission.

Why! It is the heaven-born mission of woman to be a home-maker. From the time, as a wee toddling girlie, she hugs her dollies and plays at house-keeping with bits of broken china, the home-making trait is strong within her, and if we succeed in diverting her natural instinct we will have blotted out the sweetest, most lovable, and noblest characteristic God has given to woman. Let us teach her that if she possesses the dignity of self-respect others will respect her. Let us hold up the high ideals of thoroughness, system, and order in the curriculum of exalted home-making. Let us teach her that there is art and science in cookery, dish-washing, and scrubbing. Don't say: "Mary I'll wash the dishes, it will make your hands coarse and red. You go and practice; I'll attend to the kitchen." Teach

her the neatest and most thorough way to do the work. Why, do you know, there is not one woman in fifty who knows how to properly wash dishes?

Let her feel that you depend upon her assistance. Let her see that you take pride and pleasure in your kitchen and the utensils best suited to the convenience of doing superior work. An ample sized and well made dish-pan is more to be desired in the kitchen than a plush album in the parlor. Don't say: "Mary, go and dress up. Someone may come in, and it won't do to let them find you in your working clothes." Teach her to look tidy at all times; that she is as much a lady in print as in silk; to meet company without embarrassment even though she holds a scrubbing brush in her hands and her sleeves are rolled to the shoulder. Teach her it is far better to darn a stocking neatly than to injure her eyesight making fancy work. In short, teach her so thoroughly and well the practical accomplishments that rightfully belong to the higher education of a capable housewife, that she will prove a blessing and a helpmate to the fortunate man, be he rich or poor, whose name she may some day bear. In this way we may build a substantial foundation for her future happiness.

A Foundation Policy.

Supposing an architect was to erect a beautiful palace by beginning at the cupola, adding ornamental bay windows, with elaborate filagree work here and there, and then place the structure on posts, no foundation to this magnificence. The result is quite apparent; he would receive and deserve the scathing criticism of those who passed by. Undoubtedly they would remark: "Look at that filagree nonsense, and no foundation. Surely the builder has more ambition than sense." Let us first build a solid foundation for her future usefulness as a home-maker, and then add the less essential features of music and art to her education. What is education? Is it a little book learning, too often acquired at the expense of hand and heart? The best and truest education is the knowledge gained where heart, and hand, and brain have been developed in unison, and such wisdom used for the benefit of all mankind. We are riding our educational hobby too fast, and the unmistakable wood is exposed every time the lash of progression chips from its flank the gaudily painted dapples.

The Accomplishments of Our Grandmothers.

Let us turn back the hand of time and more carefully regulate the pendulum. Yes, even to the days of our great-grandmothers, if need be, to an age when women baked and brewed, spun and wove, cooked and sewed, and did not lose caste by doing cheerfully and faithfully the manifold duties that by right or dower fell to the mistress of a home and family.

A little more than a year ago it was my good fortune to be installed for a few weeks in one of those dear old New England homes. My room was picturesque in the quaintness of furnishings belonging to a by-gone period. The bed linen was exquisite with dainty needlework, and, on inquiry, I learned that it had been a part of the maker's wedding outfit. And, although the hands that had set each stitch with such exact preciseness had been folded beneath the Green Mountain turf for more than half a century, one might still read in this dainty handiwork the character of a refined, gentle, and lovable woman, who had nobly filled the niche in which her devoted family had enshrined her as a home-maker.

Why not take pride in handing down from generation to generation this womanly accomplishment, that the exquisite needlework of our ancestors, the hemming, felling and stitching, may not become a lost art?

Need of Raising Home-Makers.

Yes, let us raise a few generations of home-makers, rather than the strong-minded, ambitious, self-supporting girls who, in the hand-to-hand struggle of bread winning, become heart-hardened and aggressive. "Look out for Number One," is the precept laid down for them to follow, and by so doing they grow selfish and skeptical. "Look out for the welfare and comfort of those about you, and take no thought as to the fate of Number One," is the council that will come from the gentle heart and lips of a wise mother. Why, it is like looking into a mirror, what you give to others will quickly reflect. No, she need not look out for Number One; let her best efforts be used for the betterment of her dear ones, and I promise you Number One will in no wise suffer.

A quarter of a century ago it was not unusual to see brides of sixteen and seventeen years. And, while to-day we have just as sweet, just as lovable and attractive girls, you will find many at twenty-eight and thirty who have never received a proposal. Why is it?

Well, in spoiling our daughters we have also harmed our sons. We have taught them to admire the stylishly dressed girl; the girl with a few superficial accomplishments, who oft-times, in a longing for luxury beyond her means, grows restless and discontented. The average young man, who must make his own way in the world quickly arrives at the conclusion that without an abundance of money or high social position it would be utter folly to attempt to make such a girl satisfied and happy. Therefore, he assumes an indifferent air; talks lightly of matrimony; has it understood that he is not a marrying man, although fond of women's society. The money that he might have put by for the purpose of building a modest home is used selfishly and extravagantly in an attempt to keep up an appearance of social standing. He cultivates an egotistical belief that all young women of his acquaintance must regret his determination to be a life-long bachelor. One evening he will favor Mary with his company. He will explain that Mary is a delightful companion. She can play rag time music and sing coon songs too cute for anything. The next evening he will devote his time to Kate. She is such a delightfully sweet and dignified girl, plays the mandolin and talks entertainingly of prehistoric art. Yes, she is perfectly charming. But, after sober reflection, he does not care to risk injuring his digestion by eating the cooking of either of these girls.

How to Get a Good Husband.

Now, girls, I'm going to tell you in strict confidence how to get a good, sensible husband, and then, if he proves worth the effort, how to keep him constant and content throughout all time, for the saddest thing in the world is, when a woman has once won the love and respect of a good man, to have it slip away from her through either her own carelessness or ignorance.

First of all, lay well the foundation of a perfect home-maker, by learning to be a good cook, a systematic and tidy housekeeper, an excellent needlewoman, who understands the art of darning and mending, for "A dollar saved is a dollar earned," and by painstaking care in this direction you may almost double a man's income. When you feel yourself so thoroughly proficient in these accomplishments that you may unhesitatingly take your place beside the man you love as his helpmate, to encourage and assist him in the road to greatness and prosperity, you stand ready to fill the sacred mission for which you were intended.

Now, did you ever see a man catch a colt? He puts some oats in a little pan and quietly goes to the field, where he stands quietly and shakes the

pan until the colt hears the rattle of the oats and comes prancing up. But the man never runs after the colt, and don't you ever run after a man. (Laughter.) When the colt becomes interested in the oats, the man slips the halter over its head and leads it away. But sometimes, even after the halter is safely fastened, the colt will rear and plunge, and if the man does not hold firmly to the strap it will break away, and the task of bringing him back will be more difficult than before.

Now, put these housewifery attractions in a pan, as it were, and while standing in your father's doorway shake the pan—the safest place a young girl ever stood is under the shelter of her father's roof. The young man will hear the tinkle, for the novel sound will echo far and wide. Such rumors as: "Mary Jones is a remarkable girl; such agreeable manners, such a model housekeeper; a wonderful help to her mother; why, her parents couldn't do without her," will go floating through the air, and men are queer creatures, whenever they hear that someone has something that they cannot spare they are bound to possess it. (Applause.) And in all probability more than one young man will have a longing to claim for his wife so capable a companion as Mary Jones.

Now should a young man come whose love you cannot return, remember that in tendering you his heart and name he has offered you the greatest honor a good man can confer upon a woman. If you do not love him, do not lower yourself in his or another's estimation by refusing him and then going about saying: "I could have married John Smith, but I did not want him." Let your lips be sealed. Regard his confidence as sacred, for if you do not love him you can at least respect him, and never for a moment let him feel that he has made a mistake in thinking you worthy of honorable love. But when the right one comes; the one you can gladly say you will "love, honor and obey," there will be no fear of poverty. If you are a true type of Canadian womanhood, you will staunchly and proudly take your place by his side, feeling it a privilege to be in every sense the helpmate that may nobly win the right to receive a royal share of credit for his ultimate success.

The Ideal Home.

Some may think that in order to have an attractive home it will require a large outlay for a suitable building and the necessary furnishings. Do not make that mistake. The most beautiful home I was ever in was a little log house of but one room and a shed. It was so exquisitely clean, and, after all, true elegance is thorough cleanliness. Fifty dollars would have paid for every bit of furniture it contained, including the bed and cook stove, and yet, it was amply furnished; the most artistically fitted up home I have ever seen. Every article was for use, and was held dear from association. The floor was scrubbed so white that no one would venture to step within until he had first wiped his feet on the husk mat that Margaret had woven with her own hands. There was a braided rug upon the floor, and an old-fashioned rocker with a feather cushion. On the little log window sill was a pot of plants that Margaret had brought from her eastern home, and the snowy muslin curtains were bits of her wedding dress. There was a cheery picture on the wall, and a mending basket that gave an added charm to the room.

I do not believe John ever put on a pair of socks that had not been darned with all the painstaking care given to the finest embroidery. There was a little pine table so fair and spotless that I used to wonder if it would melt away into fairyland should I put my childish fingers on it. And above the table were some little shelves—put there by John to hold the few dishes they owned. Do you think Margaret carelessly dumped those dishes in a

pan and hastily banged them about, regardless of nick or crack? No, she handled them with tender care. She was John's faithful, loving wife, and well they knew they could not afford to waste money replacing things broken by carelessness. Nor did she wish to see their table, however plain, made poorer or unsightly by chipped and blemished ware. And there was dainty, refined Margaret and sturdy John, who had in no wise ceased to be a lover while bearing the title of husband. Yes, it was the most beautiful home I have ever seen, for it contained the necessary elements to make it such. There was cleanliness, system and order. There was unselfishness, contentment and love. What more do you want? With these elements you could make an acceptable home out of a dry goods box. I have since been in a number of beautiful dwellings, where there was marble and tiling, elaborately carved wood and artistic frescoing, antique rugs and luxurious furnishings, rich draperies and magnificent paintings, rare bric-a-brac and exquisite statuary, but I have never been in a home that left so marked an impression upon my heart and brain as did that little pioneer hut on the border of an Iowa prairie.

Furnishing a Farm House.

In furnishing a home, we farm women too often seek to imitate a style quite unsuited to our conditions and surroundngs. For instance, the large, heavy carpets, that in the city would be sent away to be cleaned, would prove a formidable tax on a woman's strength; and it would indeed be a brave housewife whose courage would admit of asking assistance from the men during the stress of spring work. Hardwood and painted floors, with rugs of a size easily handled, are more in keeping with farm conditions. Deeply tufted, upholstered sofas and chairs will require a vast amount of time and patience to keep in a pleasing state of freshness, while easy chairs with movable cushions are more inviting and require far less attention. Good books and pictures will be the first consideration in a cultured home, and the occasional purchase of a thoughtfully selected volume is a wise and profitable investment. A well-ventilated sleeping-room, provided with the customary toilet necessities, with a simple iron bed-stead and roomy washstand, is more desirable than a stuffy apartment containing a massive set and a shortage of towels and toilet soap. If comfort and convenience be considered paramount to significence, we will make fewer mistakes in selecting our furnishings.

Advice to the Women.

When one possesses a husband and a home, she should bear in mind that it matters not how warm and glowing a fire one may have kindled, that, if it would be kept burning, fuel must be added from time to time. And so it is with the fires of love. If treated with indifference and neglect they will soon smoulder to ashes of regret.

Therefore, if you are a wise woman, you will from the start plan a practical course by recognizing the fact that no man is an angel, consequently do not expect too much. And if you would make his home more attractive than any other place look well to his physical comfort. See that his meals are carefully prepared and served on time. You know you deceived him when you made him think you the dearest, sweetest girl on earth. Now, keep up the delusion. Never let him suspect that you are not. I have seen just an ordinary little woman, who didn't know much—you don't have to know much, men, as a rule, are content to know it all—fool her husband for thirty years, and even longer, and he'd never found out that she wasn't the sweetest, smartest and most lovable woman in the world.

I have actually known a woman of this kind to give her husband so good an impression of the sex that if he lost one wife he wouldn't hesitate to marry again. (Laughter.) You can do this if you only try. Why, you can wind a man around your little finger, and he'll never be the wiser. Men are dependent creatures. Did you ever see one with a missing button or something gone wrong with his suspenders? He'll go calling through the house, "Mother, Mary, come quick I've lost a button." Now's the opportunity to show him you're the most wonderful woman on earth, for whenever a man sees another do something he can't do, he thinks it marvellous. Put on your thimble and sew that button on good and firm, while you casually remark that you don't know how he ever managed to get along without you. And he will wonder that he ever did. Oh, you can fool them in a hundred loving little ways. Men like petting, and many of them have been used to it for, if there is anything dearer to a mother's heart than her girls, it's her boys.

If you are a wise woman you will never let him miss his mother's sympathetic encouragement and approval. Remember that what is for his interest is for yours, and that he can work better and harder when he hears your cheery words of approbation ringing in his ears, and knows he will be welcomed by your happy smile. Make yourself a necessity to him, and take advantage of his every weakness. Men are conspicuously vain. Why, a woman's vanity is nothing compared to that of a man. Praise his every commendable effort. It will spur him on to greater achievements. Go out to the barn, and show an interest in the cattle. Commend his manner of feeding pigs. Jolly him up a bit by drawing flattering comparisons between his and his neighbors methods. Yes, take a loving interest in everything on the farm. The barns will be sweeter and cleaner by your presence; the cows will be more tenderly cared for, and you will be so rich in joy that a more sordid ambition will be forgotten.

But there are three things you must not do if you would keep your husband's love and respect. You must not complain, you must not find fault, and you must not nag him. If you have a trifling headache never say, just as he is starting to his work, "John, I don't feel well." It will put a damper on his best efforts. Women were born to make believe, and you can smile, even if you're not feeling quite right, until he has left the house. Then, if it is any benefit to yourself, do yourself up in camphor, and groan to your heart's content. If you are really ill, go to bed and call a doctor, and you will then know the sweetness of a tender sympathy. John will exclaim; "Bless me, the dear little woman must be sick, for she never complains," and he will undoubtedly do all in his power to restore you to health.

Do not find fault when he's making every effort to succeed. Do not paralyze his ambition by saying: "John, I was over at neighbor Smith's and they have a new carpet and a rocking chair and a picture, and are going to have their parlor newly papered, and—I don't see why we can't have such things. We are just as good, and I work just as hard as Mrs. Smith. There must be something wrong with your management. I don't think you're very ambitious." Oh, if you value your happiness, don't do it. Can't you see you are pushing him away from you? Never for a moment let your husband see you have lost faith in his ability. Though he fail in many schemes, encourage him to try again. Though all the world loses confidence in him, if he is an honorable man, never let him know you are disappointed, or that your trust has wavered.

I will tell you what to do: Put your arms around his neck and say cheerily, "John, dear, do you know what those foolish Smith's have done? They've bought a carpet and a patent rocker, and a lot of truck, and now

they will have it to care for. I'm so thankful we have more sense. When we get enough money to pay for such trash we will use it to buy a cow." You may punctuate this with kisses if you like, and John will think, "Was there ever on earth such another sensible little body." Oh, you can fool them to the end, if you only understand your business.

And, above all, don't nag. A constant nagging would break the spirit of any man. You may have a temper (some women acquire one by inheritance), but you never allowed him to see the ugly side of it before you were married, and don't do it now. If you feel you must give vent to it, wait until he has gone; then grit your teeth, take a good solid chair, and shake it furiously. You can make believe it is John, and no harm will come to the delusion your husband is laboring under. John, all unconscious, will very likely be heard bragging about the even disposition of his wife. Still, if you are unable to control your temper, and if you must give John a piece of your mind, have it out, in a hand to hand conflict, if need be. It may clear the atmosphere, like a thunder storm. Still, I would not advise it, but it is better than nagging. Whatever you do, don't nag.

Company at the Farm.

The usual monotonous round of indoor work is broken all to smithereens by the occasional appearance of one or more guests, for while some town-bred people shrink from the responsibilities incident to rural life, they are not unmindful of its summertime attractions. And when spring buds and bloom are beckoning in tantalizing fascination, the temptation to make a raid on some nearby farm house becomes so irresistible that a cheery voice will be heard calling to a neighbor: "It's a lovely day. Don't you want to take a drive in the country? I know a farmer who lives a few miles out. They're farmers, but they're nice people," is hastily added by way of apology for so obscure an acquaintance. "They own a big farm, and have lots of cows, sheep and chickens. Don't you want to go? Pshaw, they won't mind if you are a stranger; they'll be tickled to death to see us. Bring your children, and we'll have a fine time." Did you ever, right in the midst of house cleaning, when you were struggling to gain time by having a picked-up dinner, look out and see a load of jolly, daintily-dressed city people drive up to your door? Did you? And did you wring your hands in despair as the meagreness of the family larder flashed through your startled brain? No pie, no cake, no seasonable delicacy on hand, and then go forth hospitably to meet them and say, "I'm glad to see you," and at the same time feeling yourself the old hypocrite that you so heartily despise?

Now I beg of you, do not put those people in a stuffy parlor, and offer them amusement in the shape of a family album. They do not care a rap for the pictured faces of your "Sisters, your cousins, or your aunts." They may take a passing interest in the veil-decked bride or the chubby charms of an unknown infant, but it will not add to their good opinion of the restful side of farm life to have you rush to the kitchen and begin baking and stewing until your strength is exhausted and your nerves all aquiver. Do not let them carry back to their city homes the impression that you are an ignorant drudge whose sole conception of hospitality is an over-loaded table and an apologizing hostess.

There are refined, thoughtful people, who live in cities who do not come to you for a meal. They can buy that. But they do come longingly to the farm for what is priceless. They come for the peace and rest, and comfort that country life affords. They come to fill their weakened lungs with that rare oxygen of which we have so much to spare. They come to be in closer touch with Mother Nature, and to lay their weary heads upon her

soothing bosom; to learn something of her wondrous secrets, and for a time to break loose from the galling chains of formality.

Now, do not give them the idea that farm life dwarfs the intellect. Greet them with a cordial welcome. Let them see that while you may know nought of the latest social fads, you are quite familiar with every phase of your calling. Give them a part of yourself and a share of your wisdom. Take them to your clean barns, show them your gentle cattle, and call their attention to the individual merits of your stock. You may be able to quite astonish them with the glibness by which you can tabulate the pedigree of a favorite cow. Have a dignity and pride that will serve to the uplifting character and attractive features of your profession, rather than assume a bearing that will tend to accent its defects. If you are the good housewife you should be, your bread and butter will be wholesome and palatable. If you have tea and coffee, well and good, if not, perhaps you have milk, in case of shortage in this liquid, there is water. Your table should at all times be clean, and it will require but a moment to lay the extra plates. Now, ring the bell or blow the dinner horn; call in the men. It will not be necessary to offer an explanation for having your help eat at the same table; your guests will readily understand that it is your usual custom, and one best suited to your conditions. Have a dignity and manner of your own, and it will be respected. Do not try to imitate ways unsuited to your means or mode of life.

"Honor Thy Father and Thy Mother."

Yet I have known of cases where fathers and mothers had toiled and saved and planned all the best years of their lives in order to give their children advantages of which they themselves had been denied. They had sent them to academy or college to obtain the education that should prove a potent passport to the esteem of all men, and these young people had returned vainglorious enough to feel the knowledge acquired had raised them superior to those who through long years of self-denial had made this educational training possible.

I have known these young men and women when entertaining some college friends to say: "Let's get father to wait." Perhaps father likes to eat in his shirt sleeves or with his knife. Well, what of that? Isn't it father's home? And such breaches of etiquette are mere trifles compared to the sneaking ingratitude of a nature that would postpone father's meal in order to cater to the good-will of a stranger.

Now is the time to show father the true value of a creditable education. Let him see that the money obtained by many sacrifices on his part was not misapplied; that it had helped him to make a man of you, and not a contemptible snob. Place him at the head of the table with the unmistakable air, "You are honored to-day by being permitted to eat with my father."

The man or woman, young or old, who is too good to sit at his father's table and eat father's bread in father's company, is not the person for you to cultivate. Cut the acquaintance at once, and let your aim in life be to move in a better grade of society. It may be that your father's clothes are not the latest cut; possibly they are sunbleached and shiny at the seams. Still, if you will stop to think, he may have been so occupied in his efforts to pay the bills for your improvement that there was little time for thought of his own apparel. Remember this, and that your filial obligation is a lasting debt of gratitude. See that it is paid in full, and with usury; for if his son does not show him deference you cannot expect others to do so.

Need of Literature.

The progressive farmer of to-day needs no urging to supply his family with abundant and suitable reading matter, therefore, the country woman may be as well informed on both foreign and domestic subjects as one who resides in a city, and with the helpful influence of natural surroundings there is no reason why the home on the farm may not become a veritable paradise.

To the Men.

While the task of home-making is more generally supposed to devolve on the woman of a family, each member, great or small, should bear a responsibility, and take both interest and action in preserving the dignity of home life, be it lowly or grand. Some men are utterly unconscious of the fact that they have formed an entirely erroneous idea of woman and her claims upon them. They are unable to comprehend the real nature and characteristics of the true type of an intelligent, refined woman. They do not know how to draw out and develop her finest qualities any better than some farmers understand managing a dairy cow to obtain best results.

They are laboring under the impression that all women are vain, frivolous, irresponsible creatures, who should be firmly held in subjection; that if a man is unable to provide one with fine clothes, jewelry, and social amusement she will soon become discontented and wretched. A greater mistake was never made. The real woman does not care for fine clothes, jewelry or social position. If she favors them, it is only because she believes such adornment pleasing in the eyes of the man she loves. Women were born to make believe, and I have known them to serenely smile while their hearts were breaking. No, she does not hinge her happiness on luxurious raiment. If she cannot command something better, she will take it, just as a starving cow will eat straw when she cannot get hay; but she will not thrive and develop all the tender possibilities that lie within the fertile soil of a glorious nature.

What she desires above all things is appreciation, love, and petting. It does not cost anything. She will never tell you, for the woman I have in mind is too proud to beg for what rightfully belongs to her. When you have taken this girl to share your fortune of either weal or woe, when you, by your protestations of love and fidelity, have severed the ties that bound her to the home of her girlhood, when she has willingly forsaken father and mother to cling only to you, make it your lifelong study and duty to see that she never has cause to regret the step that you are responsible for her having taken.

Be patient. Remember that heretofore she has leaned upon the counsel and encouragement of her mother, and now she is called upon to exercise her own judgment and skill. She will make mistakes; she wouldn't be human if she didn't. Commend her every effort, even if the result fall short. Let her see that you have faith in her ability to accomplish all things, and she will not disappoint you. Tell her she is the neatest, most orderly little housekeeper in the country, and you are proud to have the neighbors go through her kitchen. She will not fail you. Tell her if she keeps on improving she will beat her mother cooking. Why, man alive, she will do it every time. You do not know the qualities to be brought out and emphasized with a little judicious praise. Save her strength, because an ambitious little woman will place no limit on her endurance when she is bidding for the approval of the man she loves. Keep a watchful eye on her, that she may not overtax her energy; and if you cannot afford help,

there are numerous ways in which you may render valuable assistance about the house.

See to it that she has an income or allowance that is quite her own, and for which she need render no accounting. Let her feel that you would gladly provide her with every luxury if it were within your power. Give her the chickens—you'll have a better flock of fowls—and see that she has the proper place and the needed assistance to enable her to show her skill and ability in their management. Say to her: "The money you get from this source shall be yours without question." You will find it will pay you well, for when taxes are due or you want to cancel a note, you will not have to go to the bank, you can borrow of your wife—she will have it saved.

No, women are not the extravagant creatures some men think them. Give her your confidence, and let her feel the blessing of your unbounded trust. Say to her: "Here is the pocket-book. There are such and such payments to meet, you know what we can afford as well as I; use the money as you think best." This liberty and confidence will be its safest guard; she will never touch it without first consulting you. You will find it all there, and she will cheerfully make over her old dresses and trim her bonnets, year after year, until you begin to admire the more up-to-date clothes of some other woman.

Do not say "my farm"; This is a partnership affair, and the proper term is "our farm". Ask her advice on all business matters. If you do not see fit to follow her suggestions, explain your objections, and she will be satisfied. Let her be thoroughly conversant with your business methods; then, she will be less liable to fall a victim in the toils of unscrupulous estate adjusters.

Do not go about with your lips shut and your mind occupied on matters too weighty for her comprehension. If she timidly calls your attention to the merits of some new dish or improvement, don't carelessly say, "Oh, it's all right; if it wasn't you'd hear from me." Such comments will crush the spirit and ambition in any woman.

Do not take it for granted that she knows you love her; tell her so. I will give you a ration: Tell her three times a day that you love her—no roughage in this, if you please. Do not tell her in an indifferent way. You know how you said it the first time; now repeat it with renewed tenderness. Three times a day is not too often, and many women can assimilate to advantage a much heavier ration. Do not be afraid to use endearing terms. Have a pet name for her, and call her girl, even if she be sixty or older. Youth and age are the times when love is best appreciated.

Do not complain that women fade, and that the stylish, lively girl is too often apt to change into a morose commonplace matron, for it lies within your power to prevent this transformation. A woman's heart is a strange creation. It is a sensitive plant, that sends out tiny, clinging tendrils, and if they come in contact with a cold unresponsive barrier, they will turn and seek sustenance elsewhere.

Sometimes she will transfer to her children the love and devotion that would have been gladly given to her husband had she met encouragement. Again the better part of her affectionate nature is bestowed upon clubs, charity work, educational aims, or ambitious schemes. Sometimes Satan, in the guise of one who understands her nature offers a glittering imitation of the more substantial love she craves, and if she has been taught to regard indolence and luxury above honor and industry, her situation is indeed a perilous one. But, if from childhood she has been trained in a belief that humble duty conscientiously performed may bring greater reward and joy than a realized ambition, she stands serene and safe.

So long as she has assurance of her husband's love and confidence, she will never grow old or discontented. Tall sons and daughters, yes, and tiny grandchildren may mark the progress of years; but she, living in an atmosphere of love and appreciation, will remain forever young and attractive.

If we will but cultivate these little tender courtesies as painstakingly as we do our grains and grasses—if we will by daily effort and example sow the fertile seeds of a spirit of industry, sincerity, and appreciation in the minds and hearts of our little ones—we shall have dowered them with a higher education and a far more valuable legacy than lands and gold, for we will then surely find that all of earth and the greater part of Heaven is centred right in that little spot called Home. (Applause.)

CHARACTER BUILDING.

By Helen Wells, Syracuse, N.Y., Chairman Committee on Literature, New York State Grange.

"Heaven is not gained at a single bound;
We build the ladder by which we rise
From the lowly earth to the vaulted skies,
And we mount to its summit round by round."

Thus sang Longfellow. But *how* we build the ladder from the very beginning, is determined by the fathers and mothers.

The foundations for a kind or cruel, selfish or unselfish, truthful or untruthful; honest or dishonest character, are often laid by the mother before the child is six years of age. "Oh, they are so little they do not notice" or "she is so young it will not make any difference" is often said by the careless mother. Do not think it for a minute: The impression your act may make upon that little child may never be eradicated.

Often lessons of cruelty are given to the baby when the mother would be horrified could she see the result of that careless lesson.

Almost the first thing one gives a baby boy to play with is a string tied to a chair, and a whip, with the admonition, "Now whip the horsey and make it go." The first lesson to that child about a horse is to whip it. Who has not seen a child with his hobby horse whipping and slashing and shouting to it until he works himself up into a perfect fury? In play, of course, but the child's imagination is strong and the play is for the moment real. He becomes fairly tired out with the violence of his play-emotions and is irritable to a more or less degree, depending upon the vividness of his imagination. Meanwhile the mother sits placidly by, not realizing that the first lesson in violence and lack of self-control, in cruelty to the suppressed horse, in allowing oneself to "fly into a temper" as the saying is, is being taught that child. Then when the boy is a little older and in playing with his companions or his animals, flies into a passion and beats them, shouting and screaming his anger, the mortified mother wonders "where he got such an awful disposition." Yet she has deliberately, through ignorance, trained him that way.

If, on the other hand, the mother will take the time to start the play with her boy, "Now let us make a nice stable for horsey," and turn over some chairs to make a stall, give him a pail or box for horsey's imaginary oats, let him have an old brush and comb that horsey may be groomed, tell him about the horse that it must have food and water three times a day, that it must have a soft bed to sleep upon, anything that she can tell about the horse that will cause her boy to feel a love and protecting care over it, will instruct and make him happy. Give him a string to make a harness, help

him to finally adjust it and start him for his ride. Ignore the whip, make him feel the horse is willing to do the work for the asking, and she has placed her boy at the beginning of his life, in the right relationship to the animal he afterwards may own. The grooming and care-taking are drawing out the love-nature of the boy and he is happier in consequence. He loves his horse; it is real to him.

Use makes growth. The muscles we use develop, the characteristics we use will grow. The arm of the blacksmith has its enlarged muscles, because of the every-day use of those muscles. The muscles in the limbs of the bicyclists show what steady use will do. It is the steady, every-day use of kindness or cruelty that makes the final character. It is in these little things of the baby's life that the foundations of character are laid.

I called upon a mother one day and as we sat talking her little two-year old boy was playing with, or rather teasing, a kitten. He would pull its ears and lift it by its tail and drag it around by one leg. To the kitten's agonized wails he would respond by slapping it. I could not help but remonstrate with the mother. "Oh," she answered carelessly, "I don't care, it amuses Freddy!"

"But the effect on him?" I queried.

"Oh, he is so little, it won't make any difference," was her reply.

Several years after I called there again. Freddy was now a school boy and on the floor sat his baby sister. "I don't know what to do with Freddy," complained the mother to me. "I can't leave him alone a minute with baby. He pinches and bites her and is so brutal that I'm afraid he may injure her. He seems to enjoy hearing her cry."

I wanted to answer her, "Never mind, it amuses Freddy."

Now that woman had trained her boy in selfishness, in cruelty, in disregard for the rights of others. She did not know it, but the results as far as the boy was concerned, were just the same as if she had gone deliberately to work to ruin her boy. Ignorance in that case was a crime.

A man would never be in the frame of mind that prompts him to send his old mother to the poorhouse, except by years of selfishness and cruelty. The carelessness that ignores those traits in a child may prove a boomerang and bring the anguish back upon the mother. "As ye sow so shall ye reap." was never more applicable than in the building of the character of your child.

There is nothing in the whole wide world that is of so much importance to you as *the kind* of man or woman your child will become.

Your entire future happiness is inseparably wrapped up in your children, then for your own sake, I beg, take the time to carefully implant lessons of kindness, thoughtfulness for others, courtesy and honor. Let there be one less ruffle on the dress, and one more story read to the child. Never mind if the cellar stairs are not scrubbed, and the pie is not forthcoming for dinner. You are building your future happiness and the foundations of your child's honor when you devote to them the time that is so precious.

Cull carefully the stories that the very little child is to hear. See that they are pure, sweet, uplifting and in good English. "Mother Goose" contains many pretty jingles, but it has also many coarse ones. Take for example the old familiar:

> "Tom, Tom the piper's son,
> Stole a pig and away he run.
> The pig was eat (notice English)
> And Tom was beat,
> And Tom went hollering down the street."

Nothing is said in disapproval of Thomas' theft or of his subsequent street manners. While there is nothing bad in that old rhyme, there is

nothing good either in grammar or sentiment, and a child appreciates beautiful thoughts. Why waste time on poor trash? All these little things go to form character. How can a child appreciate a good thing if it never hears it?

One of the teachers in a city school asked her little ones to bring to her some verses of poetry of which they were fond. All sorts of dainty little bits of verse thoughts were repeated to her. Some of the children gave quotations from Mother Goose, but seldom more than once, for while the teacher made no comment on it they seemed to understand that it was not good poetry and soon discarded it for better.

The child's imagination is so much more vivid than an adult's that any beautiful bit of word imagery is a source of constant delight to them all through life.

How many good sermons and wonderful lectures we "grown-ups" have forgotten, but who of us will forget the rhymes of our childhood? Then isn't it worth while to give the child something worth remembering.

Another great influence upon a little child in character building is the force of our own example: what we wish our child to become, we should ourselves be.

"Take this medicine, Tommy, it is nice and sweet," and Tommy trustingly swallows the bitter dose. But Tommy's mamma was untruthful when she said it was nice, and Tommy has discovered that fact, and if Tommy is straightway untruthful, whose fault is it?

"Don't kick the dog he may bite you," is not putting the matter before the small boy correctly. "Don't kick the dog because you have no right to hurt him. God lets him live just as He lets my little boy live, and He loves you both," would give the child a respect for the work of God's hands.

To teach a child to be kind to the helpless kitten just because she is helpless, is planting the foundations of courtesy to all dependent beings. *Because* Grandma is feeble the child must be very thoughtful of her. *Because* baby is helpless is the very reason why the child must protect it. All these uses of the characteristics of kindness and sympathy and love make them grow, just as the used muscles grow; and the child will build those elements into his moral structure just to the extent that he uses them.

A child is happier by far when he understands the right relation of himself to others, when he realizes that mother, father, sister and brother, the horse, the dog, the cat, the birds, all occupy certain positions in the plan of life, Godgiven, and that while he may use and enjoy all, he can abuse none.

It is hard for the young father and mother to adjust the baby to its place in life. To get, as it were, the "right perspective" on life. Sometimes the baby is placed so strongly in the foreground that even the husband can scarcely be seen away in the background! All other interests fade away into the horizon, while King Baby is kept as the only central figure.

If that idea is kept up long enough, a very disagreeable small child is the result. Baby feels that the world was made for him alone. He and his wishes are the only things to be considered, and so, a foolish mother has trained her boy into an over-bearing, arrogant little tyrant, a burden to her, and detested by her friends, and all before he is six years old! Of course school life will knock the arrogance out of him, but at the cost of many tears and heartaches on his part. He is handicapped in the beginning of school-life by his false position, for the school-world does not see him as his mother sees him; nor does the school world recognize any divine right by which he shall be the central figure for it to revolve around. So through pain and tears he learns his true position.

We can never surround a child with too much love, provided it is a just and wise love. During those few years while the child is with us, before it goes out into the influence of teachers and outsiders, let us give our best thoughts, our best time and energies toward laying the foundations for the character that may stand erect and true and firm when the storms of life beat upon it.

Keep a cheerful home atmosphere for the little ones to grow in. Children can no more thrive in a gloomy atmosphere than plants can grow in a dark room. No matter if father and mother have worries and troubles, do not let them cloud the children's skies. Burdening the children will not lighten the parent's load. Because of her constant presence, the mother, more than the father, is responsible for the home atmosphere. A bright, cheerful voice, a ready smile, the frequent laugh, the patient temper, all make the atmosphere of the home a healthy one for the child, in which to develop the best part of himself.

Nothing is so deplorable as the mother with the melancholy, abused air, (the effect is like that of a steady, drizzling rain); unless it is the mother who has never learned that first necessary lesson of life, self-control, and whose outbursts of temper are like violent thunderstorms, darkening the bright sunshine of love, and sending terror into the hearts of the children. One violent storm often lays low all the standing grain, and the tender plants are broken and crushed. One outburst of temper often destroys the tender love, the little confidences, that have been growing in the child heart.

The saloon owes its recruits from boys to the fact that the atmosphere of the place is "jolly." The boys are welcome and the air is full of good cheer. Parents are very short-sighted to allow the saloon-keeper to make his place any more cheerful than their own home. It is not necessary to have elegant furniture or fine paintings to make a happy home. But it *is* necessary to have cheerful and sympathetic parents. Children are more sensitive to these atmospheric conditions than adults.

We often hear of cases where although the patient was housed or fed well, still the physician prescribes "change of air," "this climate does not agree with him," or "the altitude is too great," or "it is too damp an atmosphere." The patient cannot thrive although he has good food and warm clothes and comfortable rooms, unless the *air* is pure, clear and inspiring. Neither can the child grow and thrive mentally, unless home and school are right, and pure, and clear, and inspiring. One sour, disagreeable teacher will make wretched a whole roomful of children—and what wretched, unhappy child can do good school work?

I would lay the greatest possible stress upon the home and school atmosphere being such that the children are cheerful and happy. "Be ye cheerful," is a Bible *command* that is often ignored. Many look upon cheerfulness as an accomplishment to be used in the presence of company. There are three things every mother can give to her child, a welcome when it comes, a tender love and a cheerful atmosphere in which to develop.

HUMANE EDUCATION.

By Mrs. John W. Truesdell, of the New York State Grange.

So much has already been written and said upon the hackneyed subject of how best to deal with the pauper and criminal classes, that it is well nigh impossible to offer a new idea upon the subject. Church and State, pulpit and press, concerted and individual effort, have essayed to solve the problem,

and yet, the twin spectres of poverty and crime continue to stalk across this fair land of ours, a festering sore upon the body politic.

Reformatories that do not reform; penitentiaries that harbor not a truly penitent soul; protectories that fail to protect the youthful criminal from the contaminating influence of older and more vicious inmates, are multiplied and maintained at an enormous expense to the State and to the individual.

So complicated and bewildered are all these efforts to *reform* and *punish* the wrong-doer, will it not be a relief to turn our attention to another and more pleasing view of the question? Forming the character of the child is of vastly greater importance than reforming the vicious tendencies of the man.

Believing as we do, that the "ounce of prevention is worth the *many, many* pounds of cure," both from an economic as well as a humanitarian stand-point, will it not be well to consider the subject of Humane Education as the corner-stone on which to build a new and fairer structure of human virtue and happiness.

It is much to be regretted that there are any persons so indifferent to the future welfare of society that they will not realize the great importance of introducing Humane Education into the curriculum of the public schools. Just as vigorously as reading, writing and arithmetic are taught to the child, should he be inculcated with the truth that every living, sentient being, is endowed with certain inalienable rights that he is bound to respect. Teach him that the strong should protect the weak, that the fortunate should pity and succor the unfortunate, that the dogs and cats, as well as the old grandmother and the little baby in his home, should be alike the objects of his tender care and solicitude.

Humane Education as a disciple is one of the most important factors in forming the character of the child. It develops observation, kindness and self-control, and makes children more thoughtful of each other.

When one realizes how important and serious this matter of touching the heart is, instead of always trying to *cram* the head to the total exclusion of all tender feelings, that all possible criminals of the next generation are children to-day, ready to be influenced for good or evil, the responsibility resting upon us as mothers and teachers is appalling to contemplate.

The education of children in matters of mercy cannot begin too early. The boy is father to the man, and the girl is the future mother. In order to sow these seeds of justice, kindness, and unselfishness, which will bear fruit in latter life, we must teach our little ones to treat rightly the only living things over which they have control; namely, domestic animals.

It is not quite thirty years since the first organized effort for the promotion of humane teaching among children and adults was made in this country. Yet in these years great progress has been made, and public sentiment in favor of humane education is being rapidly developed.

It has been said that the expansion of the moral nature of the child should keep pace with his intellectual development, and no better agent can be found wherewith to enlarge the sympathies and give play to the finer feeling than to teach the humane treatment of dumb animals. The very fact of protecting, considering, and caring for animals insures a uniform development of the moral, intellectual and loving sides of a child's nature, strengthening the character in every direction, thus laying the foundation of a noble manhood and womanhood.

In 1897 there were *ninety thousand criminals* under the age of thirty in the United States alone, and *ten thousand* ranging from seven to seventeen years of age in reformatories. There were ten thousand six hundred and fifty-two murders committed in the United States.

Now all these criminals were children once, but some one had neglected to strengthen and elevate their natures while they were young, and so evil and lust and cruelty ran their course.

England is far ahead of us in this vital matter of humane education. A few years ago general attention was called to one public school in London where during twenty years seven thousand pupils were carefully trained in kindness to animals, and during this time, which would make some of the boys twenty-five and thirty-five years of age, not one of them were ever arrested for a criminal offence, thus proving this teaching will prevent *crime* as well as *cruelty*.

Russia, Germany, Norway and almost every European nation, have experimented with this instruction until it has become a matter of statistics that *humane education lowers the criminal record.*

"As the twig is bent, so grows the tree." Spain with her brutal national art, educating her children in the brutalizing barbarity of the bull fight, and glorying in her shame, is a vivid object lesson to the world. With Spain in view who can refuse to teach the opposite principles of kindness in heart and life.

France long ago discovered that the instruction of children in kindness to animals made them more kind to each other, hence it was introduced into the French schools, and the Minister of Public Instruction ordered publications teaching it, to be circulated free of cost in order that this important branch of education might not be neglected.

You can take the neglected boy from the street; and teach him to feed the cat and pet the dog and the horse, and as sure as he feeds, waters and supplies the wants of a creature, pats and caresses it, and notes its expressions of gratitude, he will love it. Loving it he will wish to be kind to it. Teach him to protect the lady-bug, to spare the songster in springtime, with its nest full of young, to pick up stones from the highway and throw them into the gutter, to remove banana skins from the side walk, to feed the hungry dog and find a home for the stray cat, and you will create in him a desire to be kind, merciful and considerate. You will make him a *good man.*

In our public schools will be found all classes. The neglected boy who receives no moral training at home, nor even an object lesson, as well as the boy of careful home training. Provide him with stories, songs, poems and pictures of animals, birds and flowers, and if possible with plants and pets also, and you will awaken and promote a love for the beautiful, a desire to be kind and considerate, and will make a desirable citizen. Teach him that it is not merely not *right*, but not *manly* to terrorize and annoy, to affright and injure these fellow denizens of our common earth. They are our fellow partners in a world where there is trouble enough without our making more, and pain and fear enough without our increasing it. Cowper was right in his determination both on æsthetic and moral grounds when he said:

> "I would not enter on my list of friends,
> Though graced with polished manners and fine sense,
> Yet wanting *sensibility*, the man
> Who needlessly sets foot upon a worm."

J. W. Cottrell, Superintendent of the Detective Association of America, says, "With twenty-five years experience as an officer, I know of but very few criminals who were taught to love animals, and in searching for the causes of crime we find that the lack of humane education is the principal one."

Humane education is the foundation of all reform. If it were universally adopted, poverty, crime and war would be greatly diminished, and in

time, the vast amount of money expended to sustain armies, prisons, etc., would be saved for the benefit of the people. Humanity means civilization, cruelty is barbarism. As the world advances this fact is more and more realized. We believe that thousands of men in our prisons and reformatories might be respectable and useful citizens to-day had they received humane education in their childhood. Oh, loving mother, put your child into the arms of Old Mother Nature, and let her fill his heart with pure and holy thoughts. Teach the little ones to love the woods and fields, the birds and flowers, to call the horse and dog his friends, and you have added to his capacity for happiness a thousandfold. There is no better safe-guard you can give your boy than to send him into the world with this love of nature in his heart. A man whose heart has thus been kept pure and tender, whose soul is filled with love and compassion for all suffering creatures, can never become hardened in sin. It would be a moral impossibility.

Dear mothers, has it never occurred to you that we children of a larger growth stand quite as much in need of humane education along certain lines as do our children and grandchildren?

In a late article in the Syracuse Sunday Herald, the writer stated (erroneously we think) that "children are natural barbarians." Just as a boy is by nature thoughtlessly cruel, so is woman supposed to be naturally kind and tender-hearted. It might be considered, then, that woman's inborn tenderness of heart required no special development, and could never lead her into the sin of adorning herself with what can only be obtained through the most atrocious cruelty. If this were the case, however, should we be confronted with appeals from societies for the protection of birds, and statements by authorities that the annual destruction of bird life for millinery purposes threatens with extinction many of our most useful and beautiful species? As there is no argument on the side of bird killing for decorative purposes, so there is no excuse for its encouragement by even the most frivolous woman. We have had presented to us over and over again in every form of appeal the cruelty of the custom as well as its reckless abuse of the gifts of nature, for it is asserted on the highest authority that the destruction of field and forest birds has an appreciable effect on agriculture, yet the "Slaughter of the Innocents" goes on apparently with no diminution.

Europe uses 300,000 song birds in millinery annually. One Chicago firm buys and sells 62,000 birds and 300,000 wings. The pitiful story of the egret, whose ravished plumes wave from the hats of thousands of wealthy women, and are shown every day in the shop windows, has been told so many times that it seems as though the woman who persists in wearing them would feel a murderess every time she does so. A writer in the North American Review, says: "If every woman could realize that a hat trimmed with aigrettes was ornamented at the expense of a little mother life, would she still wish to wear them?

Aigrettes are obtained in the breeding season when the mother bird, anxious to protect her young, will not hover far from the nest and thus is an easy mark for the sportsman. Then, when the proud and happy mother is gone, killed in the moment of her terror, the cries of the hungry baby birds are left for the echoes of the woods to soothe until death at last hushes them into stillness.

Women laugh in their thoughtlessness at such sentiments as these, calling them the foolish exaggerations of Nature's enthusiasts and cranks. They cannot see the necessity of going without the birds and aigrettes, which they fondly think make their head-gear so stylish and becoming. "What are a few among many?" they say. "These ornaments were in the stores. We did not kill the birds." Pardon me, they are as much murderers of

heart as the hunter sent at their demand to bring those birds' lives for sacrifice to the altar of their vanity.

"What does it cost, this garniture of death?
It costs the life which God alone can give;
It costs dull silence where was music's breath;
It costs dead joy that foolish pride may live;
Ah, life, and joy, and song, depend upon it,
Are costly trimmings for a woman's bonnet."

Words can go but a short way, can mean so little. I wish I could bring to the understanding of every woman, that the economic danger alone from this universal bird slaughter, is no small matter; not the clamoring of a few alarmists, but a menacing evil, a terrible possibility that is threatening our land. Our vegetation would suffer more than can be estimated from the countless number of destroying insects were it not for the birds who consume them.

The United States Agricultural Department is sending out loud warnings against the appalling destruction of birds. This destruction has been followed by an enormous increase of insect pests, resulting in a loss of fruit and grain, estimated at eighty to one hundred million dollars yearly. The Government appeals to all educators to observe Bird Day, and to teach the young the value of birds and the importance of their preservation. Bird Day is already a permanent blessing in many schools.

Olive Thorne Miller, is an article on bird decoration, pertinently asks, "How can a thoughtful woman, feeling some responsibility in the training of her children, reconcile her conscience to the constant object lessons in cruelty, which the wearing of murdered birds holds up before her children?

"How dare she thus endorse and tacitly approve of cruelty and barbarity which she cannot but know are a necessary part of this infamous trade?"

In answer to the old argument that a bird exposed for sale has already been killed, Mr. Miller points out the fact that every woman who buys a bird this year insures the death of another next year.

Someone has said, "A garden without flowers, childhood without laughter, an orchard without blossoms, a sky without color, roses without perfume, are the analogues of a country without songbirds. And the United States is going swift and straight into that desert condition." Birds preserve the balance of Nature; they are the natural check upon insects and small injurious animals. But when a man steps in and destroys them the balance is disturbed and the loss is great.

The much abused cherry-bird has rescued whole villages from the elm worm plague, and it is well argued that the birds have a right to a little fruit merely as wages for their work, that only aggravated cases of perverted appetite can justify the shooting of birds. It is true that our horses and cows consume our hay and grain, but we do not for that reason shoot them.

There is much work to be done, but the first thing to do is for every woman who wears an aigrette or dead bird upon her hat to take it off and put it in the fire. This may seem harsh, but what else can she do with it? Certainly she would not give it away to be used by another. You may say the bird is killed and the harm is done and that you may as well enjoy it, but remember that so long as these things are worn, so long will it be the fashion to wear them and there will be a demand for more.

Does any woman imagine these withered corpses, cured with arsenic, which she loves to carry about, are beautiful? Not so; the birds lost their beauty with their lives.

As soon as the magic word goes forth that birds and aigrettes are no longer worn, then will milliners refuse to accept them, and the wholesale murderers will turn their attention to some more profitable way of making money.

"Think what a price to pay
Faces so bright and gay,
Just for a hat!
Flowers unvisited, mornings unsung,
Sea ranges bare of the wings that o'er swung,
Bared just for that!

"Think of the other ones, too
Others, and mothers, too,
Bright eyes in hat.
Hear you no mother groan, floating in air,
Hear you no little moan, birdlings despair,
Somewhere for that?

"Caught 'mid some mother-work,
Torn by a hunter Turk,
Just for your hat!
Plenty of mother-heart yet in the world;
All the more wings to wear, carefully twirled,
Women want that!

"Oh, but the shame of it,
Oh, but the blame of it,
Price of a hat!
Just for a jauntiness, brightening the street;
This is your halo, oh, faces so sweet,
Death—and for that"

SANITATION.

By Dr. A. H. Speers, Burlington.

Great progress has been made during the last few years in knowledge concerning the causation, modes of spreading, and effective measures for the prevention and restriction of diseases.

From a social-science standpoint, the prevention of disease is much more economical than is its cure. Sooner or later the people generally will recognize this fact and then there will be a greater demand for sanitaria, and people will realize the great importance of cleanliness and carefulness, lest any disease, which might be in the locality, should spread. It is well known that with the general improvement in sanitary conditions there has been a gradual increase in the average duration of human life, throughout the history of civilized man. A few years ago leprosy was a common thing in England. England was dotted over with leper hospitals, but thorough isolation was practiced until now it is a very rare disease in that country.

Not many years ago scurvy was a common disease. Its cause became known, preventive methods were adopted, and now it is a disease of great rarity. In some countries consumption has been lessened by better drainage, making a drier and warmer soil about the house, but until its proper cause became known it could not be successfully combatted.

The wonderful reduction in the mortality of small-pox patients through vaccination, is well known, but probably some of the most important diseases, which can be prevented through proper sanitation and cleanliness are—typhoid fever, diphtheria, scarlet fever, and small-pox. Typhoid is largely prevented by a proper water supply, and the other three by isolation, and such measures as may be adopted by the physician in charge, for it

is said, and truthfully said, that anti-toxin injected into the system of one exposed to diphtheria will prevent that disease. Anti-strepacocci serum injected into one exposed to scarlet fever will prevent that disease, and vaccination will modify, if not altogether prevent, small-pox. It is only of late years that consumption has been looked upon as a communicable disease, that being the reason why there are more deaths from that disease than from any other.

All diseases which cause premature death should be considered to be preventable, and efforts should be made to gain such knowledge of their causation as will enable man to adopt the proper measures for their prevention.

All houses should be built with a proper view to ventilation, heating, lighting, and drainage. The water supply should be considered. For the prevention of consumption there should be not only destruction and disinfection of all sputum, but the patient, or those who have a tubercular tendency, should live in a house well ventilated and well drained.

There was a time when the public thought little more than to abate any nuisance that might exist, and used such measures as might restrict the spread of small-pox. Too often the functions of a board of health, or of a health officer, are supposed to be the abatement of such nuisances as powerfully appeal to the sense of smell, sight or hearing. We know that the important diseases which are spread by ordinary filth are few, compared with those which are disseminated and cannot be recognized by the sense of smell or hearing.

The specific causes of some diseases have no odor. They are not visible except with the aid of a microscope. Not that filth does not cause disease; it may do so, at least there are diseases, which if they are not caused by filth are so intimately associated, that an enlightened avoidance of filth is a preventive of the disease. "Is cleanliness next to Godliness?" some would ask. In replying some would say, "Yes," and yet we have to modify it. That idea was once held by sanitarians, but it is now known to be false. The house-wife has one standard of cleanliness which requires that a dish for the table must be thoroughly washed with soap and hot water, rinsed with clean water, drained and wiped dry with a clean cloth. If such a clean dish be given to a chemist for his most accurate work, he may object that the dish is not clean, and he will rinse it in alcohol or acid or an alkali, according to the particular form of matter, which in his opinion makes it unclean for his purpose. If this same dish be given to a biologist he will pronounce it unclean and unfit for his purpose; it must be submitted to boiling water for at least five minutes or in dry heat of 240 degrees F., and then he will require that it be not exposed to the air for an instant, lest it become unfit for use. It is plain, then, that what ordinary people consider a clean plate, a clean article of clothing direct from the laundry, a piece of new goods from the store, or any of the ordinary articles which we consider clean, may have received and may convey the specific cause of any of the most dangerous diseases.

How do some of the most important diseases enter the body? In typhoid fever, the typhoid bacilla is reproduced in the intestine. By taking proper care of a patient in typhoid, and being particularly careful as regards the excrement, typhoid is not a very contagious disease, but the possibility of direct transmission must be acknowledged. It usually enters the system by drinking water that contains the typhoid germ. It then passes through the stomach and into the intestines and lodges here, producing an inflammation and ulceration of certain glands.

Many epedemics have been known to originate from the water supply. If we wish to avoid typhoid, if we are in any way exposed to it, we should never put into the mouth any unboiled fluids, such as milk, water, or even raw vegetables which may have been washed in infected water. Dishes or

milk cans should not be washed in infected water, and water used for brushing the teeth should be previously boiled. The ice supply must come only from a pure source. Oysters should not be fattened in beds near the mouths of sewers. Inasmuch as flies sometimes convey typhoid by carrying the germ on their feet and alighting on raw fruit or other delicacy in the sick room or in the house, it is quite proper not to eat any fruit that may have been in the room of the patient who has typhoid, lest the disease be communicated in this way

To prevent the spread of typhoid, the excreta must be thoroughly disinfected, either by one to ten of carbolic acid or one to five hundred corrosive sublimate, chloride of lime, etc., the corrosive sublimate solution being the best. The thermometer and all other utensils used in connection with the patient should be thoroughly disinfected; nurses and attendants should be cautioned to wash their hands thoroughly and immerse them in a corrosive sublimate solution or carbolic solution, and the physician should be likewise careful. All linen and bedclothes used by the patient should be soaked in a 1-20 carbolic solution and subsequently boiled from one to two hours. Disinfection of the excreta should be begun as soon as the physician announces it a case of typhoid, and should be continued for ten days after the temperature has remained normal. The excreta should be buried in a trench four feet deep and covered with chloride of lime. Nurses should be careful to disinfect door-knobs, which they may have handled with infected hands in passing from the patient's room. The mattress, if soiled from the excreta of patients, should be destroyed.

Let us next pass on to diphtheria. This may gain a lodgment in any part of the body where there is a broken surface, but ordinarily it does so in the throat. As a rule, it does not enter the general circulation of the human body, what enters is the poison evolved by the bacillus. The disease is most prevalent during the autumn and winter months. It is quite possible that the opening of the schools in the autumn may be a cause for the increase in the number of cases at that time.

Diphtheria enters the body through inhalation, or in some way has been conveyed to the mouth. The presence of a carious tooth, enlarged tonsils or chronic catarrh, afford ample opportunity for the entrance of bacilli. Shreds of fibre may be coughed up and lodge in the eye of the physician or nurse and in such a way be communicated to a mucous surface. The disease may be transmitted by kissing,although highly communicable to any one within a few feet of the patient. The contagion is not like that of measles or scarlet fever, in that it does not spread through the air, and this renders it possible to isolate a patient in an upper room, and still have the house perfectly safe for dwelling purposes. Bedding, clothing and handkerchiefs may carry the disease for long distances; fur bearing animals, especially cats, may carry the disease from one animal to another.

The period of incubation of diphtheria is from two days to one week. Diphtheria begins with a sore throat, and the constitutional symptoms which follow are caused by the absorption of the poison from the diphtheria germs. It is in a large degree a preventable disease. The first and most important measure of prevention is isolation. Not only should the child afflicted be isolated, but also the one who is exposed. In the case of the latter, quarantine should be kept up for at least five days. After a person is apparently well of diphtheria, there is a possibility of conveying the disease, for the germs may lodge in the throat for a considerable time after the throat is well. At least two weeks should elapse before the patient should be allowed to mingle with other people. When diphtheria is prevalent in a neighborhood particular caution should be observed in isolating everyone who may be suspected of having the disease.

The room selected for a diphtheria case should be one that can be the best isolated, and at the same time that can be made most comfortable for the attendants. This is usually on the top floor, or one the most remote from the living portion of the house. A sheet should be placed before the doorway moistened with a solution of carbolic acid 1 to 20. The measures most successful in preventing infection of others, are absolute cleanliness and immediate destruction or removal of all secretions from the throat and nose. Pieces of soft cloth, or small strips of cheese cloth, may be used for the patient to expectorate in, and these should be immediately burned, or put in an antiseptic solution of 1 to 1000 of bi-chloride of mercury, or 1 to 20 of carbolic acid. All soiled clothing should be placed in water and immediately boiled, or should be kept in a bi-chloride solution until boiling is possible. Dishes and spoons used in sick rooms should be taken care of and treated to a solution of carbolic. The carbolic solution should be kept handy for frequent washing of the hands of the nurse.

It would be better not to have any carpet in the room, but if there be one it should be sponged over daily with an antiseptic solution. At the termination of the disease all toys and books should be destroyed: the room should be washed, floor, walls and ceiling, and then fumigated.

In every house where there are children, and it is at all possible, it is wise to furnish one room as a sick room. The floor should be of hard wood and the walls and ceiling should be covered with washable paper. The furniture should be of the plainest and without grooves; there should be no upholstered furniture or permanent hangings. Such a room can be made as cheerful and useful in time of health as any in the house, and it will greatly simplify the matter of disinfection. The nurse is more liable to contract the disease than any other person, and should therefore receive more attention than she usually does. She should disinfect her hands frequently and change the outer dress often, using one that can be washed. She contracts the disease often by germs being carried to the mouth by her hands or on her food; if possible therefore she should eat in a different room and also sleep in a different room to that of the patient. She should use a mild throat wash several times a day. A healthy throat is one of the greatest safeguards against diphtheria; latterly antitoxin is being used as a preventive in cases of diphtheria as well as using it on the patient. It is often used as a preventive to the rest of the family.

Scarlet fever will be considered next. We have not a thoroughly verified knowledge of the cause of scarlet fever, but as I understand it, the disease usually enters the system by inhalation and probably starts in the same way as diphtheria. The room for a scarlet fever patient should be situated in a remote part of the house, the same as for diphtheria, and even greater precautions taken against the spread of the disease than for diphtheria, as it is disseminated by means of dust or fine particles which may have scaled from the patient.

The patient may infect others as soon as he is taken sick with the disease, although not usually until after the rash has developed and it begins to desquamate. The contagion clings to clothing, books, toys, rugs, carpets, furs, wall paper, feathers, hair, etc., with great tenacity, and articles of clothing worn by the scarlet fever patient have been known to retain power for infecting for months or even years. The disease may be carried by a third person; it may also be carried in milk if the germs should fall into it. Scarlet fever seldom attacks infants. As a rule, if a person has had scarlet fever once it will prevent them from having a second attack, but cases are on record where there has been a second attack or even a third. A person is not so susceptible to scarlet fever as to measles; a mild attack and a severe one may occur side by side.

The period of incubation in scarlet fever is from one to ten days. The invasion is usually sudden; the first symptoms noticeable being vomiting, and

a high fever, with the tongue red at the margin and tip and coated in the centre. After a time this white coating goes off, leaving the tongue very red; this is known as the strawberry tongue. The rash appears in from eighteen to thirty-six hours after the patient has taken sick and appears first on the side of the neck, the breast and the back. If the fingers be drawn across the rash a white or yellowish-white streak remains for a moment The rash usually subsides on the third day after it has come out, and two or three days after that the skin begins to desquamate, or peel off. This is most noticeable in the hands and feet, the skin sometimes coming off in large flakes. The process of desquamation lasts from two to four weeks, and sometimes longer. The period of quarantine in this case is at least six weeks and no one should be allowed to attend school or any public place for at least six weeks after the onset of scarlet fever in a home.

Consumption enters the system usually by means of inhalation, it being disseminated by means of dried sputum. Occasionally it enters the system by a person partaking of milk or eating the flesh of a tuberculous animal. Occasionally consumption is contracted by means of being carried from one part of the body to the other through the general circulation. At the present time there is no disease which demands greater attention to prevent its spread. It has been called the "white plague." How necessary it is to see, then, that all sputum is properly disinfected and destroyed, so that the disease may be limited as much as possible.

PRACTICAL HOUSEKEEPING.

By Mrs. Colin Campbell, Goderich.

A Good Housekeeper. In the fullest and best sense, how great is the significance of the term "a good housekeeper." Whether she rule in mansion or cottage her sway must be over a household in which the chief elements of a happy home will not be lacking. We have an ideal of what we should be in the home. We want home to be the most delightful place in the world for our husbands and children: we want the atmosphere to be always cherry and helpful. We want our loved ones to look forward to the homecoming as the happiest time of the day. We want the home to symbolize joy and restfulness and good comradship. We assert, and with reverence, that it is not possible to overrate the value of one who by patience, energy, and self-sacrifice succeeds in making all around her contented and comfortable.

Praise is readily accorded to those whose province it seems to be to shine in society; whose brilliant talents or accomplishments almost command admiration; while those who simply devote themselves to their home, to the comfort of their husbands and the care of their children, are, in comparison, but lightly esteemed; while in reality they should be more so. They often do a higher, nobler work than mere talents could effect, and seldom without self-sacrifice. These good women have their reward. If the works of their more gifted sisters find a place in the world, their deeds of forebearance, patience and thoughtfulness live in the hearts of those they love; and they may be content in the knowledge that in the truest meaning of the word, they are helpmates to their husbands and that hereafter "their children will rise up and call them blessed."

Housekeeping as an Education. Housekeeping should be taught our girls, but in these days of science and high-pressure education, there seems to be but little time to spare for homely tasks. In many cases at least it is not till they marry and have to take upon themselves the guidance and responsibility of a household, that they realize—lacking a previous training—how hard that burden may be.

If the study must be accomplished, if it is necessary for so many girls to learn a great deal that they will, in all probability forget in the first years of married life, if not sooner, surely a little time might be spared from the gaiety and amusements of those emancipated from school life, to learn what in after years will be of essential value both to themselves and others. We compel our girls to study Latin, modern languages, and literature. This may be well, but in the schools of only a few of our cities does cooking occupy a place of any importance in the curriculum. Teachers of languages and philosophy must first be paid, and then there is seldom any money left for the salary of a well-instructed and capable teacher of the culinary art. Take cookery for example, there are very few young people who cannot be interested in this, and, beginning with the comparatively easy and pleasant task of making a cake or pudding it would be thought no hardship to turn to more difficult branches of the art, nor to learn "the reason why" for everything. There is an innate love for housekeeping in most girls, and it might so easily be cultivated.

Health in the Household. To a very great extent this lies in the hands of the housekeeper, for with her rests the responsibility of arranging for clean rooms, regular meals, providing food for all, seeing that it is the best of its kind, suitable for various ages and constitutions, and also that it is properly cooked and served.

There are but few people who do not realize the fact so often stated by the highest medical authorities, that for invalids food is more important than medicine; yet, when in health how many of us are careless and indifferent about our diet, so long as we have what is pleasant to our individual taste.

It is well known that some of the most fatal diseases, such as consumption, are brought on by poor food; and as equally well known is it that infectious complaints spread most quickly amongst the ill-fed. These reasons alone should be sufficient for us to think it necessary to give some attention to the science and economy of food.

Appeal to a medical man as to the best means of avoiding illness, and one of his prescriptions will certainly be a good diet—one which contains the proper food constituents to build a healthy frame and nourish a healthy body.

It is of vital importance for all who can to know what is necessary in the way of food to sustain and support the human frame in its full vigor, not only for their own sakes but for those whom they may be called upon to provide for.

A Happy Home. This should be the housekeepers' first aim, but let her not imagine the details of her work to be so many sordid cares. Never let her lose the love of the beautiful in her anxiety to accomplish the practical. After cleanliness and comfort should come grace and beauty in the home, nor should they ever be lacking. It costs less money to make a home pretty and attractive than many people fancy, but it does cost time and trouble. However, the housekeeper whose heart is in the work will not grudge the hours spent in making places look bright and pleasant, when she sees the result of her labor.

Unselfishness. A good woman should be a good housekeeper, for the latter must possess one of the greatest of all virtues, namely, unselfishness. Forgetfulness of self is almost a necessity with the mistress of a household, for with her rests the question of the health and comfort, if not the happiness, of all its members. A grave responsibility, that it is only in human nature sometimes to shirk! It is so difficult to arrange for the best, so hard to plan things to give satisfaction to all, so much to be sacrificed.

Yet, with one's heart in the work and one's shoulder to the wheel, there is no difficulty insurmountable if only we think of others before ourselves.

Housekeeping Accounts and Expenditures. "No man is rich whose expenditure exceeds his means, and no one is poor whose incomings exceed his outgoings." Unless household accounts are kept, the housekeeper will very likely find that her expenditure does exceed her means, and that alone should be sufficient reason for keeping them carefully and regularly. To "cut our garments according to our cloth" is, in the case of small incomes, sometimes a difficult matter in keeping house; and, to a certain extent, this is caused by not knowing what we ought to spend upon different items according to our family and our means.

There is only one way in which we can make a small income cover all our needs, and that is by planning what we can afford to spend upon each thing. To do this we must first reckon up the cost of all "necessaries," and it will not be difficult to apply the balance that remains. There are too many people that prefer to be grand rather than comfortable; and still more who, without meaning to, spend a good deal more than they need or can afford upon unnecessary luxuries. Let housekeepers beware of falling into this grave error. Let them, whether their incomes be large or small remember that it is their duty to live within their income and that extravagance is a vice. Let them remember that though their incomes may not yearly increase, their expenses probably will, and while living in the present it is well to think of the future and its contingencies, with the happy conviction that there is something set aside for the "rainy day."

DEFECTS IN BUTTER; THEIR CAUSE AND REMEDY.

By Miss Laura Rose, Guelph.

Not long ago I was talking with a prominent merchant, and he told me that in the two hundred pounds of butter he had taken from farmers that Saturday morning, it would be hard to find a pound of what might be classed as choicest butter. The statement surprised me, for I was of the opinion that dairy butter had greatly improved, and I still think it has, but along with the improvement has risen a higher standard in the butter line, and consumers are demanding a better article. What, at one time, they found no fault with, they are dissatisfied with now. While this may be a little hard on the bad butter makers, it is a decided advantage to those who are producing the fine article, for the discriminating buyer is generally one who is willing to pay a higher price for something a little better than that which the general public are eating.

We may preach, teach and demonstrate, but so long as the same price is paid to every woman who brings butter to the store, no marked improvement is to be looked for. The larger dealers for some years have paid for it according to its quality, and it is the only just way of doing. Every other produce is paid for on the *quality* basis and why not butter?

What are some of the common defects found in dairy butter? First, and by far the most important, is lack of good flavor. Seldom is found that delightful, sweet, nutty taste and smell, that makes a pound of butter last only half as long as one of bad quality. So far as the pocket book is concerned, buying number one butter is rather hard on it.

Bad flavor may be due to feed, but this is likely to be only when cows run on short weedy pasture or rank clover, rape, etc., or are fed on turnips or musty food. In order to make a better butter from such milk, the whole

milk or sweet cream may be pasteurized by heating it to 160 degrees, and holding it at that temperature for twenty minutes, then rapidly cooling to seventy degrees or below. It is necessary to add to the pasteurized cream, some good flavored sour cream or skim-milk, so as to have the cream nicely ripened in proper time for churning.

The greatest cause for off-flavored butter is lack of care in milking and after care of the milk and cream. If we could but realize the bad results of a little dust or dirt falling into the milk, or the improper washing of the milk utensils, we would be more vigilant in our work. *Cleanliness* is the prime factor in securing good butter, and if many had a higher ideal of it their butter would be much improved.

Occasionally butter has a butter-milk flavor. This is due to allowing the cream to become over-ripe or by holding it too long before churning. The remedy is to keep the cream at a lower temperature and churn oftener. Sometimes in the heat of summer small white specks are seen in butter. It will invariably be found that the cream had not been stirred during gathering. The skim-milk had settled to the bottom of the milk can and become hard and caked, and when in the churn small particles of the curd adhered to the butter. This is a most serious defect, as this curdy matter soon decomposes and the butter rapidly deteriorates. The cream should be stirred thoroughly from the very bottom to the top. The best thing for this purpose is a simple little cream stirrer, which may be had at a tinsmith's for ten cents.

Keep the cream always covered. In winter we see much pale weak-bodied butter, due, largely, to the cream being hard to churn, and the temperature having to be high to get the butter to come. Churning at a high temperature dulls the color; incorporates into the butter considerable water, and gives it a crumbly, loose texture. To overcome the necessity of such a high temperature, have a fresh milk cow in the herd, feed plenty of succulent food, take a rich cream, and never have the churn more than half full.

Streaky butter is a defect easily overcome. It is merely due to the salt not being evenly and thoroughly mixed into the butter. Salt has the power to develop color and where there is no salt the butter is paler.

Mottles in butter are due to the butter being worked at too low a temperature and the salt not getting through the butter. We are apt to find streaks when the butter has been soft when working, while mottles appear in butter which has been very firm when being worked.

Salvy, greasy butter is due to improper and too much working. Butter should be worked by pressure and not by friction. Rubbing or scraping the butter breaks down the fat globules and takes away that nice waxy appearance good-grained butter possesses. A lever butter worker properly used is the best means of expelling the moisture and working in the salt without injury to the butter.

Occasionally we see butter with an incrustation of salt on the outside. This is because the butter has been kept in a dry place where the water was evaporated from the butter, and as it came to the surface, the salt that came with it was left behind.

Some people make good butter but soon have it spoil by putting it in a musty, badly ventilated cellar, or exposing it to varying temperatures. Butter to keep its good quality should be held at as low a temperature as possible (below freezing is not too cold), and should be kept in a sweet, clean place, and gotten to the consumer as soon after making as possible.

Q. Do you advocate salting in the churn?

A. Miss Laura Rose, Guelph. Yes, as the butter requires less working and is not so apt to be streaky.

Q. Where you have the "perform" in the cow do you not usually have the "form"?

A. I would say "Yes" as a rule. Of course there are exceptions, but judging from the cows at exhibitions and those which have made records for themselves in milk production—invariably they are of the dairy type.

Q. How would you care for milk over Sunday if sending it to a creamery?

A. After milking it in as clean a manner as possible, strain immediately and cool rapidly to below fifty degrees, if possible. It is well to keep the milkings separate as adding the warm milk to the cold hastens the development of acid. Cover the cans to keep out dust, flies, etc.

Q. Do you think the milk from a herd would vary five per cent. in a month?

A. Yes, I think it quite possible. Cold weather, harsh treatment, a new hand at milking and many other causes, could influence the percentage of fat in the milk. I have known a cow under my own supervision to go from 2.6 per cent. to 3.4 per cent. in a week. The only cause I could attribute it to was the cow was out in a cold rain.

Q. Why do you advocate washing butter, when many of the Danes, who are considered the best butter-makers, do not wash their butter at all?

A. The Danish butter is almost entirely made from pasteurized cream and contains a rather small percentage of lactic acid. The cream on the Canadian farms is mostly unpasteurized and frequently over-ripe. Washing the butter with pure water, while it may rob it of a little of its flavor, adds greatly to its keeping qualities—a very necessary precaution to take, as our butter as a rule is held longer than the Danish.

Q. If you have not a Babcock milk tester, how can you tell when your cream is the desired quality to churn?

A. When you can make 2 1-2 pounds of butter from a gallon of cream, you have a cream that handles nicely in the barrel churn.

Q. Will cream vary from the same separator?

A. Yes. A number of conditions will influence the quality of the cream- the speed of turning, the inflow of milk into the bowl, etc.

Q. How can you tell when a separator is doing good work?

A. There should not be the least trace of cream on the skim milk after standing for a length of time, and a good machine properly operated will not leave more than one half of one per cent. of butter fat in the skim milk.

Q. How long should milk stand in the creamers before being drawn off.

A. For twenty-four hours in water, kept at a temperature below forty-five degrees.

Q. What is the average per cent. of fat left in creamer and shallow pan skim milk?

A. Judging from the large number of samples of milk I test every year, I would say from five to eight tenths of one per cent. Right conditions and careful work reduces it to three tenths of one per cent.

Q. How would you fix a strainer cloth on a strainer milk pail?

A. Personally I do not like strainer pails. I prefer a well-made ordinary tin pail. Then have a separate strainer, with a small tin ring to slip on easily over the bottom rim. Place over the bottom of the strainer three of four thicknesses of cheese cloth and slip over the ring. Remove the cloth each time of using. Rinse first in warm water, then scald well. If the strainer pail had "snout" enough a narrow tin band could be made to hold the cloth in place.

Q. Should milk be occasionally stirred while cooling if set in creamers?

A. Get the cans in cold water as soon after milking as you can. After the milk cools place on the can cover and do not in any way disturb the milk or you retard the rising of the cream.

Q. Does the speed of the churn make any difference to the coming of the butter, and can you make the churn first go one way and then the other?

A. I like to churn as fast as I can so long as I am sure the cream is dropping. If churned too slowly the cream does not get force enough when dropping and takes too long to bring butter. You may reverse the churn if you wish but there is no advantage in doing so.

Q. Is there much difference in butter paper?

A. Yes, a great deal. Good parchment paper is tougher when wet than dry, and should never tear when taken from the butter. If the paper be printed see that the ink does not leave a stain on the butter. I have seen paper printed in blue leave a most objectional red mark on the butter. It was because poor ink had been used.

Q. How much butter should be made from three hundred pounds of milk, testing four per cent butter fat?

A. Every 100 pounds of milk contains 4 pounds of butter fat, so that in 300 pounds of the milk there should be 12 pounds of butter fat. Butter is supposed to contain 84 per cent. butter fat, the other 16 per cent. being made up of water, salt and a little curd.

Therefore if 84 pounds of butter fat make 100 pounds of butter,
1 " " will make 100 " "
84

12 " " " $\frac{12 \times 100}{84}$ = 14.28

There is always more or less waste in the manufacture of milk into butter, and for practical purposes add one sixth of the butter fat to the butter fat, and it equals the yield of butter—that is 1-6 of 12 pounds B. f. x 12 equals fourteen pounds of butter.

Q. How can you tell when butter has had sufficient working?

A. When it has a compact look, and when cut down shows no great amount of moisture on the surface and has an even color. Better slightly over-work than under-work the butter. Few people would notice the former, while the latter would result in having streaky butter.

Q. Can you churn sweet cream?

A. Yes, and if the work is properly done there will be little or no difference in the time required, or the loss of butter fat in the butter milk. The flavor of the butter will be very mild, and butter so made has not such good keeping qualities.

THE CULTIVATION OF THE PANSY

By Mrs. John Mulligan, Millbrook.

In the flower language the pansy means "thought." As this flower is well known no description is necessary. If trouble worries just get a bouquet of these dear little flowers and look at them until you see the human eye in each, when silently, sympathy and comfort will come to the heart. For this effect—it is sometimes called "heart's ease." Buy the seed from a pansy specialist, if very choice seed is desired; or it can be purchased in the seven colors of white, black, cardinal, yellow, blue, violet, and striped variegated.

In the springtime the seed may be sown when the trees are starting into leaf, and good pansies be the result. A better way is to sow the seed in February or March in a wooden box two or three inches deep. The compost should be loamy soil, well-rotted forest leaves, a little fine sand or ashes, and these should be thoroughly mixed. Fill the box to within one-half inch of the top; press the soil with a piece of glass or shingle; water this well and let it stand for two hours. Now scatter the seed over the surface, press again with a clean piece of glass and cover lightly with very fine soil to the depth of three times the size of the seed. Keep the soil moist with tepid water, but not too wet. If a piece of cotton cloth is placed smoothly over the soil and the water poured through it and not directly on the soil, the tiny seed will not be disturbed. Place the box in a position that will not be too warm, cover it with a paper for a few days, and when germination is evident, uncover gradually to the light and air.

Transplanting should be done when they are in four or six leaf, into a bed or frame prepared for them. This bed should be in a partly shaded position, and where it will have some shelter through the winter. The soil should be fertilized with well rotted manure from the cow byre, and also deeply dug. Put the little plants in six inches apart being careful to spread out the rootlets. If there comes a dry time water every evening, pinching off the buds until the plants are well established.

For winter protection, cover the bed late in the fall with a light mulch of short straw or newly fallen leaves held in place by leafless branches, or the bed may be encased in a low board frame, filled with leaves and covered with canvas or boards leaving an opening at each end to admit the air, as pansies will not stand smothering.

If we wish to have strong plants, with the largest flowers possible, having long stems covered with a bloom of the richest color we must prepare another bed in the fall, and as soon as the warm days of spring appear, again transplant the pansies, now over a year old.

In this bed plant them in rows one foot apart, and nine inches apart in the row. Pinch off every bud, and if long in the stock, cut off one or two joints. Continue to pinch off the buds until the first of July and work in the upper soil of the bed some well rotted manure. About the first of August move or transplant them in the same bed by beginning at one side of it, row after row, until all the plants stand where the unoccupied soil was before. This will promote more flowers and check too much growth of the roots. Let them bloom now, pick all fresh flowers to give to the sick friends, not forgetting those who seem to have no friends.

The bed may be planted in the seven colors, each row being of the same color, or it may be in a circle and the plants of each color placed in circles. To save the seed of the choice pansies remove some plants to another place, and when the capsules turn the least brown, pick them off and dry in a box having holes in it.

FLOWER CULTURE.

By Miss Jennie Elliot, Bluevale.

I will first deal with house plants; the kinds and requirements of each.

Flowers like people, have their likes and dislikes, so in order to be successful one must understand the nature of each plant. As a rule the housekeeper has too many plants, forgetting that a few really pretty plants are more admired than a whole windowful of unhealthy plants.

Geraniums are general favorites on account of their easy culture; they require good soil, suitable drainage and plenty of water when needed. Do not, however, water a plant until it is quite dry and then give it a good soaking.

Chrysanthemums are very pretty but few people know how to cultivate them properly. Do not grow a chrysanthemum for more than one year. When once it stops flowering cut it down to the pot and in a short time suckers will spring up from the base of the plant. Select the strongest of these and plant in a small-sized pot of not more than three inches in diameter, using a very sandy finely-pulverized soil. They should be planted in a light cool place to take root, as much of the success in their culture depends on the root growth at the commencement.

The Begonia is a very popular houseplant, and requires comparatively little attention. As they never do well in the sunshine they should have an eastern exposure. They do well in a moist soil of leafy mould, loam and sand. They are seldom attacked by insects, but sometimes by the mealy-bug which may be easily destroyed by an application of fir-tree oil and kerosene.

The Fuschia is one of the best summer blooming plants. It should have a soil much the same as the begonia, and you can scarcely give it too much water. If it should be attacked by the mealy-bug or the green aphis, fir tree oil given as directed will help it. Tobacco tea is often used to kill the green aphis. Make the tea about the color of that used on the table, dip the plant in the solution, and leave it for five minutes.

Some winter flowering bulbs, chief among them being Tulips, Narcissus, Yellow Bird of Paradise, and several others should be planted firmly in a five-inch pot, immediately when they are received. Leave the crown of the bulb just above the surface of the soil. All bulbs delight in a rich composition made up of about two-thirds decayed loam and one-third well-decayed manure and sand. After potting they should be given plenty of water, taking care that the water has penetrated all of the soil. As soon as the pot is drained it should be removed to the cellar (where the temperature remains at about thirty-two degrees) covered with about six inches of moist sand, and allowed to remain for four or five weeks. By that time a good growth of roots will have been made. It is very essential in raising bulbs that the roots should be well-formed before the flower spikes have made much headway: otherwise, a weak, straggling and imperfect flower will be produced.

After the plant has been brought to the light it should be kept in a temperature of fifty to sixty degrees F., although it will not injure it if it should drop to freezing point; in fact, the cooler the plant is kept, providing it does not drop to freezing point, the better will be the flower spike produced. The only advantage of heat being to hasten the time of flowering.

To keep plants in a cellar over winter, they must be kept free of water; for water has killed more plants than all other causes combined. In the fall of the year, if you have any plant which you would like to keep, but have no room in the house for it, just cut it down to the pot, and set it in a dark dry place in the cellar. Leave it there until spring and then plant in fresh earth or in the garden, and you will have as pretty a flower as you had the year before.

Another method is to shake all the earth free from the roots and hang the plant, head downward, without pruning, from the ceiling of the cellar.

Plants are often injured by little white worms at the roots. To destroy these, take a piece of perfectly fresh lime as large as an ordinary sized teacup, put this in a pail of water, and allow it to dissolve; pour off the clean water and apply enough to the soil to thoroughly saturate it. As a fertilizer ammonia

is a good thing. Add one table spoonful to about three quarts of water, and thoroughly water the plants with this once a week, for a period of about six weeks, and you will notice a marked change in growth and color as well as in the bloom.

Garden Flowers. The average farmer does not, as a rule, believe in spending much time in the cultivation of flowers. He looks upon them as a sort of luxury with which he cannot find time to meddle, and although he enjoys seeing them on his table, he does not appreciate them enough to take the labor necessary to bring them to perfection. In this way the work of preparing the beds for cultivation of flowers very often falls upon the wife or daughters, and few there are who have the time or strength necessary to do the work, which is, as a rule, too heavy for them. Under these circumstances the women generally select such flowers as will give the best bloom for the least amount of labor.

There is no plant easier to cultivate than the bulbous species. That round of planting tiny seeds, thinning out, transplanting and replacing does not have to be gone through to bring about the desired results.

Chief among summer blooming bulbs is the Gladiolus. From its richness and brilliancy of color of almost every shade it has great variety and is easily grown in any soil. Gladioli may be planted in solid beds, and the depth they have to be set depends upon the soil. If the soil is heavy, three inches from the top of the bulb to the surface of the soil is quite sufficient, but if the soil is very light, six inches is none too much. When planting in rows, open a trench and cover up the bulbs. Never allow any pieces of manure to come in contact with the bulbs as it is almost sure to cause decay. Before hard freezing in the fall the bulbs should be lifted, the soil shaken off close to the bulb; they should then be put in an open shed away from the frosts to dry for a few weeks. After this, pull off the roots and place in a dry cool place, where they will be free from frosts in winter, then plant in the following spring.

Do not dig the Dahlias as soon as the tops have been killed by the frost, but leave them in the ground for a few days to ripen. When handling the dahlia roots, great care should be taken not to break the tubers from the main stock. These tubers do not have eyes as do potatoes, but the bulb is at the end of the neck attached to the skin, and if this neck becomes twisted off or cracked it will cause a slim, poor growth. It is rather difficult to keep dahlia tubers unless your cellar is dry, as they are sure to rot if allowed to become damp.

Bulbs such as snowdrops, crocus, hyacinths, narcissus, crown imperials, paeonies, daffodils and tulips should be planted about the first of September, so as to have them flower early in the spring. For a protection during the winter, a covering of good manure to a depth of six inches, will keep the bulbs from being repeatedly thawed out and frozen again should it be an open winter. The strength is also washed out of the manure and the plants derive the benefit of it.

Bulbs planted very late in the fall, or carried over winter and planted in the spring seldom give satisfaction, for the reason that the foliage and the flowers commence to develop as soon as the roots, and consequently the flowers will not be so strong. It is very essential that the bulbs become thoroughly rooted before the tops are allowed to start.

Roses. Most of the favorite varieties of roses require some protection during the winter and early spring, not so much against the cold as against alternate thawing and freezing. It is a good plan to mould up the earth over the roots and up the stem for a short distance, (remember to level it

down again in the spring) and then to cover the whole plant with a wrapping of straw securely tied. Young bushes and climbers may be laid on the ground and covered with straw, which can be kept from blowing away by laying on top pieces of board. Stiff bushes that are not too large may be covered with a barrel, with the top and bottom removed and filled loosely with straw or leaves. A few holes should be bored in the sides to let in the air. The packing must not be too tight, for dampness and mould will ruin the plant. Other tender shrubs should be treated in the same way, and climbers when not too long, may be laid down when well pruned, and covered lightly with straw or leaves. They should be protected from dripping eaves as this will envelop them in ice.

Sweet Peas. Nothing can be more dainty than the Sweet Pea. It is easily grown and comparatively free from insects, but must be planted very early to make sure of doing its best. The seeds should be planted as soon as the frost is out of the ground, which is about the first of April. Sow the seed at least five inches deep, in two rows about three inches apart so that wire netting may be placed between. Give the peas water in great quantities. Never allow the earth around the roots to become dry or the vitality will be sure to depart. Do not allow the flower to form seed pods or the bloom will cease.

The Morning Glory is another old-fashioned flower which has again come into favor, and there are some new varieties which are very pretty. The Japanese varieties grow like weeds and send forth thousands of beautiful blossoms. Give the seed ordinary garden soil, and plenty of water, especially in times of drought.

The Nasturtium is another easily-grown plant that is very popular, it being such a good bloomer, and the flowers have so many tints and shades. The seeds of this plant are very inexpensive and require so little care in growing that anyone can succeed with them. They are best adapted for window boxes.

The Aster is another plant well adapted for late blooming. It is a slow grower, but will send forth its purple, pink and white flowers when all others are gone. Aster seeds should be sown in boxes about the first of April, as the seeds sown in the ground may not develop into flowering plants before the frost takes them in the fall.

The California poppy is a dainty yellow flower. Its foliage is as finely cut as the fern, and is of a pale green shade, contrasting charmingly with the pale yellow flowers.

The Pansy is a favorite with everybody. First of all pansies are big eaters, and so must have very rich soil; and secondly, they are heavy drinkers, and so must have a sprinkling every evening. Care must be taken not to freeze them with cold water. This may sound like queer advice when we remember that we have often picked pansy blossoms from under the snow, and yet it is a fact that cold water from the well will often injure if not kill them. Stir the soil around each plant every week. This may seem too much work for a few flowers, but if you do not love them well enough to care for them, it would be better to leave them alone altogether. The blossoms should be picked as soon as they reach perfection, and should not be allowed to seed.

SUMMER MEETINGS FOR WOMEN'S INSTITUTES.

Previous to the summer of 1903 the only provision made for meetings devoted to Women's Institute work, were sessions held at the same time and place as the Farmers' Institutes, the afternoon meetings being held in different halls and joint sessions in the evening. As the weather is often exceedingly inclement at the time of holding the Farmers' Institute meetings, it was thought well to arrange for a summer series of Women's Institute meetings. The suggestion met with the hearty approval of the officers throughout the Province, and accordingly arrangements were made for the holding of 189 meetings during a four-weeks series, commencing July 1st, 1903.

The attendance in many places was very encouraging, and the officers were well pleased with the success of this new venture. However, it was found that in some places the meetings—particularly during the latter part of July—conflicted with haying, and the picking and preserving of small fruits, which of course interfered with the attendance of many women who would otherwise have been present.

For this reason the meetings for 1904, (220 in number) were held beginning May 24th and continued for three weeks. This time was found to be much more acceptable than the month of July. A number of officers expressed the opinion that the meetings might well continue until the 24th or 25th of June, and it is likely that the series will extend over a greater length of time during the summer of 1905.

In addition to the regular series of Women's Institute meetings provision is still made for a lady delegate to accompany the deputations sent to Farmers' Institute meetings in localities where it is thought that the interest taken by the ladies and the needs of the work warrant the extra expense.

QUESTIONS ASKED AT INSTITUTE MEETINGS AND ANSWERS GIVEN BY DELEGATES.

Soups.

Q. What causes tomato soup to curdle?

A. *Miss Isabel Murray, St. Thomas.* It is usually that you have not added soda to neutralize the acid of the tomato, or you have let it boil after you added the milk. It should not be heated afterwards, but served at once.

Q. In making soup stock, what parts of meat do you use, and do you put them on in hot or cold water?

A. The neck and shanks of the animal are the parts most exercised; hence, they contain a greater amount of nutriment. Put the meat on in cold water, with the idea of extracting as much of the juice as possible.

Q. Is it necessary to skim off fat while stock is cooking?

A. No. When cold the fat rises to the top and forms a cover to protect the stock from the air.

Q. Can you keep stock for any length of time?

A. It will keep as long as the covering of fat is not broken nor spoiled. The best plan is to put the stock in several dishes, so that it need not be all uncovered at once.

Q. When do you season your milk soups?

A. I add the salt and pepper to the white sauce after it has boiled, as adding the salt to cold milk may cause it to curdle.

Meats.

Q. How long should one cook a roast of beef?

A. *Miss Isabel Murray, St. Thomas.* Allow fifteen to twenty minutes per pound, depending somewhat on the size.

Q. Would you advise the use of covered pan for roasting?

A. Meat should be allowed to come in contact with as much heat as possible, for a few minutes, to form the outer crust, then it may be covered and allowed to cook more slowly.

Q. What meat do you consider the most nutritious?

A. Beef.

Q. What meat is most easily digested?

A. Lamb or mutton.

Q. What are the tests for good beef?

A. Flesh, bright red; fat, slightly cream; flesh elastic to the touch.

Q. Are boiled meats more easily digested than fried meats?

A. I always consider boiled meats more digestible.

Q. What are the best cuts of boiled meats?

A. The chuck roast, the lower cut of the round, or any of the rib portions.

Q. Why is it necessary to have such a hot pan when broiling beef steak?

A. *Miss Lilian D. Gray, Toronto.* In pan-broiling we wish to keep in the juices and cook the albumin properly, as this is the principal part of meat; so we subject it to a high temperature at first to coagulate or harden this albumin on the outside, then lower the temperature and cook more slowly. This is the principle for all meats (except soup)—high temperature at first, then lower.

Q. In boiling meat should it be cooked at boiling point or below, and why?

A. In boiling meat we wish to make it tender, and yet retain all the juices and flavor. Cook by plunging it into boiling water. I boil it for five or ten minutes to harden the albumin on the outside, then place on back of stove, where the water will only simmer, and cook till tender. We prepare it in this way because it is the important principle for meat—high temperature to form a coating on the outside, then long slow cooking to make it tender and retain the juices and flavor.

Q. Is there any convenient way of keeping a stew simmering?

A. *Miss Katharine A. Fisher, East Toronto.* It may be done quite easily by putting the stew in the upper part of a double boiler, filling the lower part one-third full of boiling water, and setting the upper part in this to cook slowly.

Q. In pan-broiling a steak, is there any objection to keeping the fat in the pan to make gravy after the meat is cooked?

A. Yes, there is. The fat as it collects in the pan should be drained off. If left in, it is very liable to get overheated, when certain substances are found in it, very irritating to the stomach.

Q. What kind of an oven is best for roasting meat?

A. Put the roast in a very hot oven, and, for a small piece of meat, keep it very hot. For a large roast, check the oven to a moderate heat after the first fifteen minutes. Allow fifteen minutes to every pound of beef. Pork and veal take longer.

Q. How long does it take to roast meat?

A. *Miss Agnes Smith, Hamilton.* Allow fifteen minutes to the pound, and fifteen minutes for the meat to heat through.

Q. Which is the best method of cooking tough meat?

A. Stewing slowly would give the best results.

Q. Is it necessary to baste a roast in a covered roaster?

A. No. The steam being kept in the pan takes the place of basting.

Q. Is it a good plan to flour a roast before putting it in the oven?

A. Yes. The flour helps to form a coating on meat, so that the juices are retained.

Q. What is the object of cooking meat?

A. *Miss Jessie Hills, Toronto.* To render it more palatable; to destroy any micro-organisms; to make more easily digestible.

Q. Do you approve of the self-basting pan?

A. Yes, for some cuts. A sirloin, porterhouse, or sometimes a round is tender enough to be roasted, but other cuts of meat are not, so the pan-roasting method can be used. It is a combination of hot air and steam.

Q. Should meat be salted before cooking?

A. No, roasted or broiled meat should not be salted. Salt draws moisture, and will make the meat dry and give a rich gravy. However, it is better to keep the juice in the meat. Meat can be salted when it is cooked. A very simple experiment shows that salt will draw the gravy. Broil a steak; put on a plate; sprinkle with salt; place in the plate warmer. In a few minutes there will be a rich, red gravy. As long as the gravy is on the plate it is all right, but when left in the pan it is very often burnt or thrown out.

Vegetables.

Q. How can you cook onions without having the odor go through the house?

A. *Miss Isabel Murray, St. Thomas.* Cook them slowly, and without a lid on the saucepan. If you put a little dish with vinegar on the stove, the odor of the vinegar cooking destroys the other.

Q. Cabbage and onions do not seem to agree with me; is there any way of cooking them to overcome this?

A. Put them in boiling water; add a pinch of soda; let boil five minutes; then strain off the water. Add fresh boiling water and salt; cook slowly, uncovered.

Q. Does it matter whether you have salt in the water when you put in the potatoes, or should the salt be added when they are nearly cooked?

A. Put the salt in at first. It unites with the salts in the potatoes and keeps them in, as well as getting more evenly cooked through.

Q. Will it not do to put the potatoes on in cold water and let them come to a boil?

A. You lose considerable of the starch and salts of the potatoes in that way. Have the water boiling when you put them in, except in the case of very old potatoes.

Q. Why are onions considered so good for a person?

A. *Mrs. McBeth, Toronto.* They purify the blood by absorbing any poison which may be in the system.

Q. Is there any nourishment lost when potatoes are peeled before boiling?

A. *Miss Blanche Maddock, Guelph.* Yes. The mineral salts of the potatoes are just within the skin, and are therefore lost when the potatoes are peeled before being boiled.

Q. Is it possible to cook vegetables, such as turnips and cabbage, without odors?

A. *Mrs. E. M. Torrance, Chateauguay Basin, Quebec.* Yes. If the vegetables are put in boiling water and then kept at the simmering point it need never be known by the neighbors what we are cooking. The boiling point is 212 degrees and simmering 180 to 195 degrees.

Q. Is there any advantage in steaming vegetables?

A. *Miss Katharine A. Fisher, East Toronto.* As compared with the method of cooking them in boiling water, there is less of their food substance lost in the cooking water. In boiling vegetables, however, we can prevent the loss of any food substance by using the cooking water for making sauces and cream-of-vegetable soups.

Q. Is the water that potatoes have been cooked in poisonous?

A. Raw potatoes contain a poisonous substance but this is destroyed by cooking. The cooking water, therefore, is perfectly harmless.

Q. How long should vegetables be soaked before cooking?

A. Vegetables fresh from the garden do not require soaking. The longer they are out of the ground the longer soaking they require (from 15 to 60 minutes) as they are always losing water by evaporation. Dried vegetables—peas and beans—should be soaked at least twelve hours.

Q. How do you bake beans?

A. *Miss Jessie Hills, Toronto.* Soak them in cold water over night. Boil all morning and bake all afternoon. When they are put in the baking dish, condiments may be added.

Salads.

Q. How would you prepare beets for salad?

A. *Miss Isabel Murray, St. Thomas.* Boil them till tender; slip into cold water, and then peel off the skin. Chop up fine, add salt and pepper and mix with dressing. You may add chopped celery, apples or nuts.

Q. What kind of salad is the most nutritious?

A. The meat salad contains a greater amount of nutriment, but the fruit and vegetable salads are valuable on account of the acids and salts which they contain.

Q. What causes salad dressing to curdle when you add the eggs?

A. I find that when I use the whites of eggs the action of the vinegar gives a curdly appearance, which I never have when I use the yolks only.

Q. When should you add the yolks?

A. I let the vinegar boil up with all the other materials, then I have the yolks beaten light and thinned with a little water; and pour the boiling mixture over the eggs. Put back and cook slowly for a few minutes.

Q. Why does salad dressing curdle when not made in a double boiler?

A. *Miss Mary Bell, St. George.* Because the milk or cream used will curdle or coagulate at boiling point. When cooked over a hot fire or free flame it is almost impossible to prevent this coagulation.

Puddings.

Q. In adding beaten eggs to hot corn starch, isn't it just as good to pour the eggs into the mixture as vice versa?

A. *Miss Isabel Murray, St. Thomas.* I pour the mixture over the eggs, as the eggs thus all come in contact at once with the hot mixture and are cooked evenly.

Q. How are you going to add eggs to the cornstarch pudding, when you say you have to boil the starch, but must not boil the eggs?

A. I let the corn starch come to a boil with the sugar and milk, etc., then have the eggs beaten up light and pour the boiling mixture over the eggs. This usually cooks them enough, or it may be poured back and heated for a few minutes.

Q. Give a recipe for a wholesome, tasty pudding that can be easily and quickly prepared, but not of corn starch or bread.

A. *Miss Jessie Hills, Toronto.* One receipt is a "Chocolate Charlate." *Rule.* 1 cup of water, 1 oz. chocolate, ¼ oz. sugar, ½ inch cinnamon (or vanilla), 1 cup whipping cream, ½ oz. gelatine.

Method. Dissolve chocolate; blend sugar; add boiling water; add gelatine; stir until gelatine is dissolved; then set aside to cool. When nearly cool add whipped cream.

Another pudding can be made from the same recipe by changing the flavoring—say add orange juice instead of chocolate.

Q. What would be the proportions of orange used for pudding?

A. To the above rule the quantities would be—rind and juice of one orange, also lemon juice.

Q. Why is lemon juice added?

A. To accentuate the flavor of orange. Orange in itself is inclined to be insipid and needs something to bring out the flavor.

Q. What can be done with candy that has grained or become sugary?

A. Candy can be boiled over again. More water may be added to dissolve it, and also vinegar or lemon juice. The action of vinegar is to convert the sugar into another form called glucose, which is the object in candy making. This object has not been attained when the candy becomes sugary.

Q. What is the cause of the meringue of beaten egg white, on a pudding or pie, falling?

A. *Miss Katharine A. Fisher, East Toronto.* The chief cause is because it has been baked in too hot an oven. The outside of the meringue will brown before the heat has penetrated and "set" the interior.

Q. In making junket, does it affect it in any way to heat the milk above the lukewarm temperature before the rennet is added?

A. Not at all. The point is to have the milk lukewarm at the moment the rennet is added.

Q. Why is junket a good dish for invalids?

A. Junket is really a pre-digested form of milk. When milk enters the stomach it is acted on by a substance called rennin. Rennet is a commercial form of this substance, and therefore acts on the milk in just the same way outside the body. The stomach is thus saved so much work.

Pies.

Q. What causes the meringue of lemon pies to shrink from the sides?

A. *Miss Isabel Murray, St. Thomas.* I think this is caused by too slow an oven; drying out the whites to such an extent.

Q. Why is it that sometimes the lemon filling is quite thin, when you use exactly the same proportions?

A. People often mix the cornstarch and lemon juice together. Now if that stands for any time the acid will change the starch to sugar and it will not thicken to the same extent.

Q. Why are people so against pies?

A. For a man engaged in muscular work they probably are not harmful, but for a student, child or invalid they are very hard to digest. Each starch cell as it were has become coated with a layer of fat which prevents the saliva reaching the starch to digest it. Cream makes a softer pie, and I think a more healthful crust, when used for shortening.

Q. What is the best method of making fresh apples into pie so that the juice will not escape?

A. *Miss Jessie Hills, Toronto.* Do not use any water, thus allowing the apples to cook in their own steam; and do not fill the pie too full.

Bread.

Q. Why cannot such good bread be made from Ontario wheat as from Manitoba grain?

A. *Miss Laura Rose, Guelph.* Because nearly all the varieties of wheat grown in Ontario are deficient in gluten; the constitutent in wheat necessary to make a light, nutritious loaf. Manitoba wheat contains from twelve to fifteen per cent. gluten; Ontario wheat from six to eight per-cent.

Q. At what temperature should bread sponge and dough be held before baking?

A. It comes on nicest at about eighty degrees F.

Cakes.

Q. Should you beat cake batter after you add baking powder?

A. *Miss Isabel Murray, St. Thomas.* A great many persons disagree on this point, but we know that with baking powder we have a second effervescence in the oven, and that it makes a very much lighter, finer-grained cake to beat it well after the flour is added; hence, I always beat mine till small bubbles form.

Q. What causes yellow spots through cake when one uses soda?

A. When soda is mixed with the milk it does not get as thoroughly mixed as when it is sifted with the flour, and spots in the cake are the result.

Q. Would you advise the making of our own baking powder?

A. It is better to buy your baking powder from some reliable druggist, than to undertake to mix it yourself.

Q. Is there any virtue in adding the whites to the cake last?

A. The air incorporated in the whites takes the place of a leavening agent and makes it lighter.

Q. Should you beat the cake after you add the whites?

A. Just fold in the whites lightly. If you beat it you destroy all the air cells.

Cereals.

Q. Why do cereals give a satisfied feeling when eaten as porridge, followed in a comparatively short time by hunger?

A. *Miss Lilian D. Gray, Toronto.* Such porridge has not been cooked properly and is pasty. The stomach is lined with a delicate membrane, and this sticky mass coats this delicate lining, giving a full feeling at first, but it is soon followed by hunger.

Q. How long should cereals be cooked?

A. They should be stirred into boiling salted water, then cooked in a double boiler, more slowly, from five to eight hours. The starch in all cereals requires long, thorough cooking. The best way is to make a large quantity two or three times a week and heat up enough at a time for the morning meal.

Q. Should cereals be used in summer?

A. Some people can, without injury, use them both summer and winter, but oatmeal is very heating, and it is well to dispense with it in warm weather. Breakfast foods make a good diet for summer use.

Q. Are so-called "breakfast foods" of equal value with the ordinary oatmeal or wheat porridge?

A. For a healthy stomach porridge is an excellent food, and the chief difference is that in the manufacture of breakfast foods by the use of heat, they are made to pass over the first step in the digestion of starch, and in this way are good for a weak stomach. For the average, healthy stomach porridge is rather preferable.

Q. What is the advantage of cooking cereals in the double boiler?

A. *Miss Katharine A. Fisher, East Toronto.* There are many advantages.

(1) They are cooked more evenly. When cooked over direct heat the cereal is liable to stick and burn on the bottom.

(2) Stirring makes the cereal pasty. No stirring is necessary in the double boiler after the mixture has been thickened.

(3) There is no waste by the meal drying on the sides of the pan, such as there is when cooking directly over the heat.

(4) The prolonged cooking thoroughly cooks the starch, thickens the tough framework and develops fully the flavor.

(5) They may be cooked when the fire is on the day before and re-heated next morning, but without stirring.

Q. Is oatmeal as good a food for summer use as wheat?

A. *Miss Mary Bell, St. George.* Oatmeal is more heating than wheat; therefore, wheat is preferable in warm weather.

Eggs.

Q. Why do you recommend raw eggs for a person in a debilitated condition?

A. *Mrs. McBeth, Toronto.* They are easily taken; easily digested; very nutritious, and do not tend to biliousness.

Q. How would you advise taking them?

A. Break into a glass; add a little salt and pepper, if desired; and a drop or two of lemon juice or vinegar; then swallow the egg whole.

Q. Why should eggs not be packed in fresh oats?

A. Because the oats in drying give off moisture, which is absorbed through the porous shells of the eggs; and thus give an undesirable flavor to the eggs.

Q. What is an easy method to tell whether eggs are fresh?

A. *Miss Isabel Murray, St. Thomas.* If dropped in a ten per cent. salt solution only the very fresh ones will remain at the bottom. If the eggs are dropped into cold water and the large end rises, the eggs are not fresh.

Q. What would you consider the best food for a person who is run down in health?

A. I think you would find more nourishment in carefully prepared eggs than in any other food. Raw eggs are the most digestible.

Cheese.

Q. How do you make macaroni and cheese?

A. *Miss Jessie Hills, Toronto.* Break macaroni in one inch pieces; throw into boiling, salted water; boil twenty minutes. Butter baking dish; put in a layer of macaroni; sprinkle with bread crumbs and cheese, salt and pepper, and so on until the dish is filled. Pour over the top a thin white sauce; sprinkle with bread crumbs; bake until brown.

(*White Sauce.*—1 tablespoonful butter, 1 tablespoon flour, 1 cup of milk, salt and pepper).

Q. What is the food value of macaroni?

A. The value of macaroni as a food is that it is a proteid—a muscle building food.

Q. How does its value compare with meat?

A. Macaroni is a proteid; meat is a proteid. Macaroni is cheap; meat is expensive. The digestion of macaroni taxes the system to a much greater

extent than meat on account of the quantities of cellulose. Cellulose is the cell wall which surrounds the proteid. In meat the cell covering or the covering of the muscles, is of a gelatinous nature. Cellulose has no food value; gelatine has; it is a proteid in itself. Therefore, meat is the better food, and vegetable proteid introduced into the food occasionally would not only be a change, but a saving financially.

Q. If cheese is a condensed form of food, how does it compare with meat as regards nutriment?

A. One pound of cheese is equal to two pounds of meat.

Q. When cheese is toasted or cooked it very often forms a stringy mass. To what is this due and how can it be remedied?

A. A stringy mass is not good cheese to start with. It has not been properly ripened, and also may not be made of good milk. To overcome this difficulty I have found only one method—namely, by heating and stirring constantly over hot water.

Q. How can cut cheese be kept without an oily rind or hard part being formed on the surface?

A. Cheese may be kept soft by wrapping it in a cloth moistened with vinegar, placing it in an air tight box, and in a cool, dry place.

Q. Do you consider cheese nourishing?

A. *Miss Isabel Murray, St. Thomas.* Yes, very nourishing, as it is made out of the casein of the milk; the part that builds up tissue.

Canning and Preserving.

Q. How may we know a good quality of granulated sugar?

A. *Mrs. Colin Campbell, Goderich.* Try a little of the sugar to make a syrup. If a bluish-grey scum gathers on top after the boiling, send the sugar back to the grocer with an order for a better quality.

Q. Is it necessary to use the best quality of sugar for preserving?

A. Yes. The best sugar obtainable is a necessity for fruit preserving.

Q. Why do you put a silver spoon in the jars when filling them with fruit?

A. Silver being a good conductor of heat takes the heat from the fruit and lessens the danger of breaking the jar.

Q. When should fruit be gathered?

A. Never gather fruit when the dew is on it; nor on a rainy day.

Q. Should water be added to the fruit when preserving it?

A. If the fruit is very juicy avoid adding water. The less water that has to be used the finer the flavor of the fruit and the more beautiful its color.

Q. Are tin-covered tumblers best for keeping jelly?

A. Tin-covered tumblers have proved troublesome in my experience, as the tops corrode; are hard to remove from the glasses; and often the jelly has moulded underneath the tin.

Q. What kind of bags should be used for jelly making?

A. Three kinds are needed made of mosquito netting, cheese cloth, and flannel.

Q. What shape should jelly bags be?

A. They should be triangular in shape and hemmed with double seams.

Q. What should you do with currant and grape jelly that would not jell?

A. Melt the thin jelly and add one or more pints of strained apple juice. (one pint to six tumblers).

Q. Will this change the flavor of the jelly?

A. No. This is one of the secrets of the canning factory; much so-called fruit jelly being made out of apple juice colored and flavored and sweetened with glucose.

Q. What is glucose?

A. Glucose is a substitute for sugar in preserves.

Q. Why is it that fruit will not jelly sometimes?

A. *Miss Isabel Murray, St. Thomas.* It is a substance in fruit called pectin which causes it to jelly. If the fruit is under ripe this is undeveloped; if over ripe it is changed to a sugar, pectose, and will not jelly. Hence, success depends on getting fruit at the right stage.

Dairying.

Q. Does cream from a separator need to be strained into the churn?

A. *Miss Laura Rose, Guelph.* It is always wise to do so, in case lumps or curdy matter might get into the churn.

Q. Is the Holstein cow considered the best for cheese making?

A. Only, I think, from the standpoint that she may produce a gallon of milk cheaper than any other breed.

Q. Is it possible to make as good butter from cream taken from pans as that from a separator?

A. The separator cream has much in its favor to produce a better butter; but unless the cream be properly cooled before adding to the cream can, and well stirred, an inferior article may be the result.

Q. I notice you say cream can. Do you prefer a can to a crock?

A. Yes. It is not so porous as a crock, and is more easy to thoroughly clean and scald; besides not being so heavy and more easy to handle.

Q. What are the reasons for taking a fairly rich cream for butter making.

A. *Miss Bella Millar, Guelph.* By having the cream rich we are able to churn at a lower temperature; bring a firmer butter, and have less loss in the butter making.

Q. What are some of the things to consider when choosing churning temperature?

A. The richness of the cream. The ripeness of the cream. The amount of cream in the churn. The kind of cream. The length of time the cows have been milking. The feed the cows are getting.

Q. Would you always use a thermometer in butter making?

A. Yes.

Q. Do all thermometers register correctly?

A. No. When buying one it is well to compare it with a standard thermometer, or if there is not one at hand that is known to be correct, have your dealer place a number in a vessel of water and choose yours from those which register alike.

Q. Would you send a thin cream to the creamery?

A. No.

Q. Why not?

A. It is just as necessary to have a rich cream at the creamery as it is to have it in the home dairy. If you send a thin cream to the creamery you are giving away skim milk that you might just as well keep on the farm.

Q. What causes a variation in the test of cream from a separator?

A. There are many causes, such as running above or below speed; overfeed or underfeed; hot or cold milk; cream outlet or skim-milk outlets partly clogged; the amount in the supply can.

Q. What is the most popular method of creaming milk on the farm?

A. The hand cream separator.

Q. What are the disadvantages of taking a thin cream to handle?

A. Cream will sour more readily; higher churning temperature; greater loss in butter milk. Butter from cream churned at the high tem-

perature will not stand the same amount of working without becoming greasy, as butter which is churned at a lower temperature.

Q. What are the advantages of having a Babcock tester on the farm?

A. You are able to test the individual cows of your herd, and by testing and weighing the milk you will know what each cow is doing. You will also be able to test your cream for churning; to test the skim-milk and butter-milk, and in this way be enabled to detect any unnecessary loss.

Q. Do you think it would pay to have a separator where only six cows are kept?

A. *Mrs. Andrew Kinney, Grand View.* Yes. As it has been repeatedly proven that there is a gain of one pound a week to each cow when using the separator in preference to the deep setting plan.

Q. Do you think creamers better than pans, when only one cow is kept?

A. No. The shallow setting, of the old time crock are preferable.

Q. Can creamers be used profitably in summer without ice, when good cold water is used?

A. No. The running spring water is much better than standing water. The water immediately surrounding the can becomes warmed with the milk.

Q. Why heat the milk before putting it into the creamers?

A. If the milk has been allowed to cool, then it should be heated to or above animal heat before being put into the creamers—a temperature of say 100 degrees. It is much better, however, to put the milk into the creamers as soon after being drawn from the cows as possible. We are sure then of good results. Heat cans and plunge at once into iced water, being sure the box contains plenty of ice.

Q. Would you heat milk if using crocks or pails or pans?

A. Yes; though not as a rule in summer.

Q. Do you think creamers can be used successfully when submerged in water?

A. I do not think them as good as those having ventilation at the top, and hardly think they could be used successfully.

(A VOICE) Yes, they were a success.

(A SECOND VOICE) Yes, that is true.

(A THIRD VOICE) We could not get one that did not allow water to get in, and there was no way of ventilation.

Prof. H. H. Dean, Guelph. The old Cooley can, which was one of the first built on this plan, gives very good results. It is necessary, however, that there should not be any danger of water getting into the cans. One of the advantages of having the cans submerged is that if the water is pure there is no danger of impure air getting into the milk or cream, and cooling takes place on all parts of the can.

Q. My butter is soft when churned at fifty-five degrees. There are no old milkers and the cattle are salted regularly. What is the matter?

A. *Mrs. Kinney.* Try, if possible, to keep the cream sweet, holding it at forty-five degrees. Have your cellar sweet and well ventilated; and well white-washed with lime. Ventilate it only at night, keeping out the sun in the day time. Do not allow the cream to go above fifty-five degrees when ripening in summer.

EMERGENCIES

Q. How do you make a triangular bandage?

A. *Miss Bella Millar, Guelph.* Take a square of cotton and cut it in two cross-ways.

Q. How would you tie a triangular bandage?

A. Use the surgeon's knot.

Q. How would you put the triangular bandage on the chest?

A. Place the middle of the bandage on the injured side, with the point over the shoulder; carry the two ends round the waist and tie them; then draw the point over the shoulder and tie to one of the ends.

Q. What is to be done in the case of a burn?

A. Exclude the air as quickly as possible.

Q. What simple treatment would you use for a burn?

A. A dressing of baking soda might be used, or oil and cotton batting might be applied to the injured part.

Q. What is carron oil.

A. It is a mixture of linseed oil and lime water, and I might say it is kept in many homes and used for treating burns.

Q. What are the essentials in an emergency?

A. (1) Presence of mind. (2) Self control. (3) The power to keep still when it is best to do so.

Q. How should one put on and take off clothing when an arm is injured?

A. Remove the clothing from the sound side first; and when putting on clothing the injured side should be done first.

Q. What would you do if an artery were cut between the elbow and the wrist?

A. Apply pressure at once to the wound, by the thumb or fingers, which may later be replaced by a firm pad and bandage. If the bleeding continues place a pad in the fold of the elbow, bend up the forearm and tie it firmly to the arm.

Q. If a screen is wanted for a sick room and there is not one in the house, what would you do?

A. Take the clothes horse and tack muslin or cheese cloth on it.

Q. How would you make a temporary stretcher?

A. A stretcher can be improvised out of a strong sheet or blanket and two light poles. Each side of the sheet is wound up on the pole until there is just room for a person to lie between.

Food Values of Articles of Diet.

Q. If cheese is such a flesh-forming food why is it that it disagrees with so many people?

A. *Miss Lilian D. Gray, Toronto.* It is composed largely of fat and proteid, or muscle food, and is rich, concentrated food, so that only a little should be eaten at a time. It agrees well with men who have hard muscular labor, for they can digest it, but those of sedentary habits should use it carefully.

Q. If starchy foods are heat producers why is it that we find rice and similar foods used in warm climates?

A. These foods give heat but give it more slowly than fatty foods, and give enough energy for people who have not the need for more concentrated food such as meat, etc. Their life is less rigid and active, hence they use less concentrated and more easily digested foods.

Q. Is rice a good thing to use in summer in place of porridge?

A. Yes, because it is less concentrated and more easily digested.

Q. Give an example of perfect food?

A. Macaroni and cheese; pork and beans.

Q. How would you select good oranges?

A. They should have a fine, smooth skin with small oil glands and should be heavy for their size, so they will be juicy.

Q. What is vanilla?

A. It is the product of the vanilla plant, which is a climbing orchid.

It produces pods, much like a pea pod, in which are beans. The beans furnish vanilla. The best vanilla comes from Mexico.

Q. Which is the better food, chocolate or cocoa?

A. Chocolate. Both are made from the cocoa bean. Cocoa is just chocolate with all the fat removed, hence we get so much less food. However, both are valuable foods.

Q. Is fish, as a food, equal in value to meat?

A. *Miss Katharine A. Fisher, East Toronto.* It is much like *lean* meat in food value and digestibility. It is a mistaken idea that fish is a good brain food, on account of the phosphorus it contains. However, it is suitable to the needs of brain workers on account of its easy digestibility. It is more desirable as a means of varying the diet than as a staple food, but in the coast towns where fish is cheap, it is a good substitute for meat, which is usually hard to obtain.

Q. What is the food value of cinnamon?

A. *Miss Jessie Hills, Toronto.* Cinnamon belongs to a class called condiments, which are of little or no food value because they are used in such small quantities. Their effect is mainly of a stimulating character.

Q. Has gelatine any value as a food?

A. *Miss Lilian D. Gray, Toronto.* Gelatine is a nitrogenous or muscle-forming food, and in the body performs much the same function as albumen, only less perfectly, and so has value as a food, but for best assimilation it requires to be used with other food.

Miscellaneous.

Q. What do you think of bargain days?

A. *Mrs. Andrew Kinney, Grand View.* Bargain days may be all right, but here comes the need of education in quality. Trashy goods, no matter how cheap are not bargains. Time is too precious to spend in making up this sort of material. Often times merchants have an overstock, or shop-worn goods, which are of excellent quality, but have not taken the eye, and which often make up much more prettily than they appear in the piece. The careful buyer is looking for just such bargains. Give the girls lessons in these matters, and then allow them to shop on their own responsibility. If they are disappointed in quality sometimes they will look sharper next time. A lesson in this particular would not be out of place for the boys, for there are very few of them know the quality of the goods they buy. When they are left to themselves to choose they are apt to take that which the salesman wants to sell.

Ready-made men's and boys' shirts are a lottery and a snare—especially what is called the working shirt. The brown and white, and blue and white stripe shirting are the best to wear. The black sateen variety are to be looked at and handled suspicously.

Q. Is the glossy kind good to wear?

A. The stiff, glossy (mercerized, they call it) is not good to wear. The soft, fine, firm gloss gives very good satisfaction.

Q. How would you tell a good print or cotton?

A. A good print or cotton leaves a very fair, straight edge when torn; the thread ends are also even. A good washing print usually has the pattern stamped well through to the wrong side.

Q. Is it not a good plan to buy a cheaper line some times, especially in dress goods? They can be made up tastily and nicely, and one can afford a change oftener?

A. As a rule poor material looks well for a very short time; whereas a good material is good in appearance to the last thread.

Q. Does it really make much difference to the rest of the people in the house, if a sheet is hung outside the door of the room of a person who has a contagious disease?

A. *Mrs. McBeth, Toronto.* This sheet kept constantly soaked with some disinfectant solution—and hung outside the door of the sick room—breaks all connection with the rest of the house. It is a precaution which causes little trouble and may to a great extent prevent the spread of the disease to the other inmates.

Q. Where may water glass be bought? We have not heard of it in this section.

A. *Mrs. McBeth, Toronto.* Water glass may be procured at any soap factory—where it is used to give the desired solidity to soap—but is generally to be had in any town of moderate size.

Q. What are the proportions for blending baking powders?

A. *Miss Agnes Smith, Hamilton.* If you wish to keep a mixture on hand, blend in the proportions of six parts of cream of tartar to three parts of soda, and one part of flour.

Q. Will Paris green sprinkled around the floor and walls kill Buffalo bugs?

A. *Miss Jessie Hills, Toronto.* I do not know, but it is a dangerous thing to have around where there are children. A good method is to lay a damp cloth over the carpet seam and press with a scorching iron. The steam will kill all moths. Another method is to spray the room with naptha and close it up for twenty-four hours. This method is excellent for all house pests, but care should be taken that no light is brought into the room while the process is going on.

Q. How do you prevent prints from fading when being washed?

A. *Miss Jessie Hills, Toronto.* Soak black and pink prints in salt and water, and delicate mixed colors in pared potato water. Use alum.

SUMMER SERIES OF WOMEN'S INSTITUTE MEETINGS, 1903.

Division I.

Miss Bella Millar Guelph.

Miss Jessie Hills, 11 Spencer Avenue, Toronto.

1.	Wellesley	North Waterloo	July 2
2.	Winterbourne	North Waterloo	July 3
3.	Waterloo	North Waterloo	July 4
4.	Brampton	Peel	July 6
5	Acton	Halton	July 7
6.	Georgetown	Halton	July 8
7.	Milton	Halton	July 9
8.	Campbellville	Halton	July 10
9.	Palermo	Halton	July 11
10.	Burlington	Halton	July 13
11.	West Flamboro	North Wentworth	July 14
12.	Millgrove	North Wentworth	July 15
13.	Freelton	North Wentworth	July 16
14.	Westover	North Wentworth	July 17
15.	Rockton	North Wentworth	July 18
16.	Lynden	North Wentworth	July 20
17.	St. George	North Brant	July 21
18	Glenmorris	North Brant	July 22
19.	Tranquility	North Brant	July 23
20.	Cainsville	North Brant	July 24
21.	Onondaga	North Brant	July 25
22.	Mount Pleasant	South Brant	July 27
23.	Scotland	South Brant	July 28
24.	Burford	South Brant	July 29
25.	Cathcart	South Brant	July 30

Division II.

Mrs. A. Kinney, Grand View.

Miss Katharine A. Fisher, East Toronto.

1.	Jerseyville	South Wentworth	July 2
2.	Carluke	South Wentworth	July 3
3.	Glanford	South Wentworth	July 4
4.	Binbrook	South Wentworth	July 6
5.	Stoney Creek	South Wentworth	July 7
6	Tapleytown	South Wentworth	July 8
7.	Smithville	Lincoln	July 9
8.	Campden	Lincoln	July 10
9.	Jordan Harbor	Lincoln	July 11
10.	Grange Hall	Lincoln	July 13
11.	Ridgeway	Welland	July 14
12.	Marshville	Monck	July 15
13.	Winger	Monck	July 16
14.	Canfield	Haldimand	July 17
15.	York	Haldimand	July 18
16.	Kohler	Haldimand	July 20
17.	Selkirk	Haldimand	July 21
18.	Port Dover	Norfolk	July 22
19.	Simcoe	Norfolk	July 23
20.	Waterford	Norfolk	July 24
21.	Aylmer	East Elgin	July 25
22.	Mount Salem	East Elgin	July 27
23.	Sparta	East Elgin	July 28

Division III.

Miss Ida M. Hunter, 52 McKenzie Crescent, Toronto.

Miss Lulu Reynolds, Scarboro Junction.

1.	Atwood	North Perth	July 2
2.	Monkton	North Perth	July 3
3.	Milverton	North Perth	July 4
4.	Hampstead	North Perth	July 6
5.	Shakespeare	North Perth	July 7
6.	Tavistock	South Perth	July 8
7.	Carlingford	South Perth	July 9
8.	Fullarton	South Perth	July 10
9.	Russeldale	South Perth	July 11
10.	Staffa	South Perth	July 13
11.	Kirkton	South Perth	July 14
12.	Exeter	South Huron	July 15
13.	Bayfield	South Huron	July 16
14.	Beachville	South Oxford	July 17
15	Currie	South Oxford	July 18
16.	Norwich	South Oxford	July 20
17.	Springford	South Oxford	July 21
18	Brownsville	South Oxford	July 22
19.	Mount Elgin	South Oxford	July 23
20.	Coldstream	West Middlesex	July 24
21.	Strathroy	West Middlesex	July 25
22.	Appin	West Middlesex	July 27
23.	Chatham	West Kent	July 28
24.	Fletcher	West Kent	July 29
25.	Port Alma	West Kent	July 30
26	Wheatley	West Kent	July 31

Division IV.

Miss Lily M. Beam, Black Creek.

Miss Jennie Roddick, Cobourg.

1.	Alma	West Wellington	July 2
2	Glenallen	West Wellington	July 3
3.	Drayton	West Wellington	July 4
4.	Palmerston	West Wellington	July 6
5.	Harriston	Union	July 7
6.	Lakelet	Union	July 8
7.	Clifford	Union	July 9
8.	Drew	Union	July 10
9.	Holstein	South Grey	July 11
10.	Dromore	South Grey	July 13
11.	Durham	South Grey	July 14
12.	Allan Park	South Grey	July 15
13.	Elmwood	South Grey	July 16
14.	Cargill	South Bruce	July 17
15.	Walkerton	South Bruce	July 18
16.	Mildmay	South Bruce	July 20
17.	Belmore	South Bruce	July 21
18.	Teeswater	South Bruce	July 22
19.	Holyrood	South Bruce	July 23
20.	Ripley	Centre Bruce	July 24
21.	Kincardine	Centre Bruce	July 25
22.	Glamis	Centre Bruce	July 27
23.	Pinkerton	Centre Bruce	July 28
24.	Paisley	Centre Bruce	July 29
25.	Chesley	Centre Bruce	July 30

Division V.

Mrs. D. McTavish, North Bruce.

Miss Isabel Murray, St. Thomas.

1.	Bolton	Peel	July 2
2.	Alton	Peel	July 3
3.	Shelburne	Dufferin	July 4
4.	Laurel	Dufferin	July 6
5.	Flesherton	Centre Grey	July 7
6.	Priceville	Centre Grey	July 8
7.	Maxwell	Centre Grey	July 9
8.	Kimberley	Centre Grey	July 10
9.	Heathcote	Centre Grey	July 11
10	Rocklyn	Centre Grey	July 13
11.	Massie	North Grey	July 14
12.	Bognor	North Grey	July 15
13.	St. Vincent	North Grey	July 16
14.	Annan	North Grey	July 17
15.	Kemble	North Grey	July 18
16.	Kilsyth	North Grey	July 20
17.	Desboro	North Grey	July 21
18.	Tara	West Bruce	July 22
19.	Southampton	West Bruce	July 23
20.	Port Elgin	West Bruce	July 24
21.	Ethel	East Huron	July 25
22.	Bluevale	East Huron	July 27
23.	Wroxeter	East Huron	July 28
24.	Gorrie	East Huron	July 29
25.	Fordwich	East Huron	July 30
26.	Molesworth	East Huron	July 31

Division VI.

Miss Blanche Maddock, Guelph.

Miss Lilian D. Gray, 650 Bathurst Street, **Toronto.**

1.	Islington	West York	July 2
2.	Weston	West York	July 3
3.	Woodbridge	West York	July 4
4.	Kleinburg	West York	July 6
5.	Thornhill	East York	July 7
6.	Maple	West York	July 8
7.	Churchill	South Simcoe	July 9
8.	Thornton	South Simcoe	July 10
9.	Cookstown	South Simcoe	July 11
10.	Beeton	South Simcoe	July 13
11.	Bond Head	South Simcoe	July 14
12.	Alliston	South Simcoe	July 15
13.	Everton	West Simcoe	July 16
14.	Creemore	West Simcoe	July 17
15.	Duntroon	West Simcoe	July 18
16.	Singhampton	West Simcoe	July 20
17.	Nottawa	West Simcoe	July 21
18.	New Lowell	West Simcoe	July 22
19.	Bracebridge	South Muskoka	July 23
20.	Muskoka Falls	South Muskoka	July 24
21.	Macaulay	South Muskoka	July 25
22.	Beatrice	South Muskoka	July 27

Division VII.

Miss Agnes Smith, Hamilton.

Miss Marie Delaporte, Toronto.

1.	Cobourg	West Northumberland	July 2
2.	Grafton	West Northumberland	July 3
3.	Centreton	West Northumberland	July 4

Division VII.—Continued.

4.	Brighton	East Northumberland	July 6
5.	Wooler	East Northumberland	July 7
6.	S. S. No. 8, York Road	East Northumberland	July 8
7.	Frankford	West Hastings	July 9
8.	Harder's S. H.	West Hastings	July 10
9.	Baysville	West Hastings	July 11
10.	Wallbridge	West Hastings	July 13
11.	Ivanhoe	North Hastings	July 14
12.	Queensboro	North Hastings	July 15
13.	Springbrook	North Hastings	July 16
14.	Foxboro	East Hastings	July 17
15.	Melrose	East Hastings	July 18
16.	Read	East Hastings	July 20
17.	Tweed	East Hastings	July 21
18.	Spencer's S. H.	East Hastings	July 22
19.	Adolphustown	Lennox	July 23
20.	Stella	Amherst Island	July 24

Division VIII.

Mrs. Colin Campbell, Goderich.

Miss C. L. Mongan, Toronto.

1.	Ellesmere	East York	July 2
2.	Markham	East York	July 3
3.	Uxbridge	North Ontario	July 4
4.	Woodville	West Victoria	July 6
5.	Lindsay	West Victoria	July 7
6.	Bobcaygeon	West Victoria	July 8
7	Little Britain	West Victoria	July 9
8.	Fenelon Falls	East Victoria	July 10
9.	Omemee	East Victoria	July 11
10.	Lakefield	West Peterboro	July 13
11.	Millbrook	East Durham	July 14
12.	Garden Hill	East Durham	July 15
13.	Bowmanville	West Durham	July 16
14.	Hampden	West Durham	July 17
15.	Solina	West Durham	July 18
16.	Columbus	South Ontario	July 20
17.	Oshawa	South Ontario	July 21
18	Whitby	South Ontario	July 22
19.	Kinsale	South Ontario	July 23
20.	Myrtle	South Ontario	July 24
21	Port Perry	South Ontario	July 25
22.	Greenbank	South Ontario	July 27

SUMMER SERIES OF WOMEN'S INSTITUTE MEETINGS, 1904.

Division I.

Mrs. D. McTavish, North Bruce.

Miss Amy Fuller, 301 College Street, Toronto.

1.	West Flamboro	North Wentworth	May 24
2.	Westover	North Wentworth	May 25
3.	Rockton	North Wentworth	May 26
4.	Lynden	North Wentworth	May 27
5.	Scotland	South Brant	May 28
6.	Mohawk	South Brant	May 30
7.	Cathcart	South Brant	May 31
8.	Burford	South Brant	June 1
9.	York	Haldimand	June 2
10.	Canfield	Haldimand	June 3
11.	Kohler	Haldimand	June 4

Division I.—Continued.

12.	Sweet's Corners	Haldimand	June 6
13.	Selkirk	Haldimand	June 7
14.	Cayuga	Haldimand	June 6
15.	Springfield	East Elgin	June 9
16.	Bayham	East Elgin	June 10
17.	Vienna	East Elgin	June 11
18.	Mount Salem	East Elgin	June 13
19.	Sparta	East Elgin	June 14
20.	Aylmer	East Elgin	June 15
21.	Wheatley	West Kent	June 16
22.	Port Alma	West Kent	June 17
23.	Fletcher	West Kent	June 18

Division II.

Miss Laura Rose, Guelph.

Mrs. George McBeth, Toronto (May 24th to 30th.)

Miss Ethel McLeod, Toronto (May 31st to June 13th.)

1.	Jerseyville	South Wentworth	May 24
2.	Carluke	South Wentworth	May 25
3.	Glanford	South Wentworth	May 26
4.	Binbrook	South Wentworth	May 27
5.	Tapleytown	South Wentworth	May 28
6.	Stoney Creek	South Wentworth	May 30
7.	Smithville	Lincoln	May 31
8.	Beamsville	Lincoln	June 1
9.	Jordan Station	Lincoln	June 2
10.	Stevensville	Welland	June 3
11.	Ridgeway	Welland	June 4
12.	Sherkstone	Welland	June 6
13.	Marshville	Monck	June 7
14.	Winger	Monck	June 8
15.	Patron's Hall	Monck	June 9
16.	Waterford	North Norfolk	June 10
17.	Simcoe	North Norfolk	June 11
18.	Port Dover	North Norfolk	June 13

Division III.

Mrs. Colin Campbell, Goderich.

Miss Gertrude Gray, 650 Bathurst Street, Toronto.

1.	Burlington	Halton	May 27
2.	Palermo	Halton	May 28
3.	Campbellville	Halton	May 30
4.	Milton	Halton	May 31
5.	Georgetown	Halton	June 1
6.	Acton	Halton	June 2
7.	Vasey	Centre Simcoe	June 3
8.	Wyebridge	Centre Simcoe	June 4
9.	Lafontaine	Centre Simcoe	June 6
10.	Wyevale	Centre Simcoe	June 7
11.	Elm Vale	Centre Simcoe	June 8
12.	Minesing	Centre Simcoe	June 9
13.	New Lowell	West Simcoe	June 10
14.	Sunnidale Corners	West Simcoe	June 11
15.	Nottawa	West Simcoe	June 13
16.	Singhampton	West Simcoe	June 14
17.	Duntroon	West Simcoe	June 15
18.	Creemore	West Simcoe	June 16
19.	Everett	West Simcoe	June 17

Division IV.

Mrs. E. M. Torrance, Chateauguay Basin, Que.

Miss L. Shuttleworth, Guelph.

1.	Islington	West York	May 25
2.	Weston	West York	May 26
3.	Fairbank	West York	May 27
4.	Elia	West York	May 28
5.	Woodbridge	West York	May 30
6.	Maple	West York	May 31
7.	Kleinburg	West York	June 1
8.	Caledon East	Peel	June 2
9.	Alton	Peel	June 3
10.	Laurel	Dufferin	June 4
11.	Shelburne	Dufferin	June 6
12.	Horning's Mills	Dufferin	June 7
13.	Flesherton	Centre Grey	June 8
14.	Maxwell	Centre Grey	June 9
15.	Vandeleur	Centre Grey	June 10
16.	Kimberley	Centre Grey	June 11
17.	Heathcote	Centre Grey	June 13
18.	Ravenna	Centre Grey	June 14

Division V.

Miss Agnes Smith, Hamilton.

Mrs. A. E. Dunbrack, Bondville, Que.

1.	Owen Sound	North Grey	May 25
2.	Chatsworth	North Grey	May 26
3.	Massie	North Grey	May 27
4.	Bognor	North Grey	May 28
5.	St. Vincent	North Grey	May 30
6.	Annan	North Grey	May 31
7.	Kemble	North Grey	June 1
8.	Kilsyth	North Grey	June 2
9.	Desboro	North Grey	June 3
10.	Allenford	West Bruce	June 4
11.	Tara	West Bruce	June 6
12.	Port Elgin	West Bruce	June 7
13.	Gillie's Hill	Centre Bruce	June 8
14.	Paisley	Centre Bruce	June 9
15.	Glamis	Centre Bruce	June 10
16.	Kincardine	Centre Bruce	June 11
17.	Ripley	Centre Bruce	June 13

Division VI.

Miss Bella Millar, Guelph.

Miss Jessie Hills, 11 Spencer Avenue, Toronto.

1.	Appin	West Middlesex	May 24
2.	Mount Brydges	West Middlesex	May 25
3.	Strathroy	West Middlesex	May 26
4.	Coldstream	North Middlesex	May 27
5.	Lobo	North Middlesex	May 28
6.	Beachwood	North Middlesex	May 30
7.	Ailsa Craig	North Middlesex	May 31
8.	Parkhill	North Middlesex	June 1
9.	Exeter	South Huron	June 2
10.	Bayfield	South Huron	June 3
11.	Bluevale	East Huron	June 4
12.	Ethel	East Huron	June 6

Division VI.— Continued.

13.	Molesworth	East Huron	June	7
14.	Fordwich	East Huron	June	8
15.	Gorrie	East Huron	June	9
16.	Wingham	West Huron	June	10
17.	Blyth	West Huron	June	11
18.	Clinton	West Huron	June	13
19.	Goderich	West Huron	June	14

Division VII.

Miss Belva Shepherd, Ingersoll.

Miss Gertrude Carter, Guelph.

1.	Springford	South Oxford	May	25
2.	Tillsonburg	South Oxford	May	26
3.	Brownsville	South Oxford	May	27
4.	Mount Elgin	South Oxford	May	28
5.	Beachville	South Oxford	May	30
6.	Vandecar	South Oxford	May	31
7.	Burgessville	South Oxford	June	1
8.	Shakespeare	North Perth	June	2
9.	Hampstead	North Perth	June	3
10.	Milverton	North Perth	June	4
11.	Monkton	North Perth	June	6
12.	Staffa	South Perth	June	7
13.	Kirkton	South Perth	June	8
14.	Fullarton	South Perth	June	9
15.	Sebringville	South Perth	June	10
16.	Tavistock	South Perth	June	11
17.	Wellesley	North Waterloo	June	13
18.	Winterbourne	North Waterloo	June	14
19.	Paisley Block	South Wellington	June	15
20.	Rockwood	South Wellington	June	16
21.	Aberfoyle	South Wellington	June	17

Division VIII.

Miss Lilian D. Gray, 650 Bathurst Street, Toronto.

Miss Lizzie Rife, Hespeler.

1.	Hespeler	South Waterloo	May	24
2.	Branchton (aft.)	South Waterloo	May	25
3.	Galt (eve.)	South Waterloo	May	25
4.	Roseville (aft.)	South Waterloo	May	26
5.	Ayr (eve.)	South Waterloo	May	26
6.	Haysville (aft.)	South Waterloo	May	27
7.	New Hamburg (eve.)	South Waterloo	May	27
8.	Breslau, (aft.)	South Waterloo	May	28
9.	Drayton	West Wellington	May	30
10.	Glenallen	West Wellington	May	31
11.	Rothsay	West Wellington	June	1
12.	Moorefield	West Wellington	June	2
13.	Palmerston	West Wellington	June	3
14.	Harriston	Union	June	4
15.	Lakelet	Union	June	6
16.	Clifford	Union	June	7
17.	Drew	Union	June	8
18.	Holstein	South Grey	June	9
19.	Dromore	South Grey	June	10
20.	Durham	South Grey	June	11
21.	Elmwood	South Grey	June	13
22.	Cargill	South Bruce	June	14
23.	Mildmay	South Bruce	June	15
24.	Belmore	South Bruce	June	16
25.	Teeswater	South Bruce	June	17
26.	Holyrood	South Bruce	June	18

Division IX.

Mrs. Andrew Kinney, Grandview.

Miss Bertha Duncan, Emery.

1.	Fenelon Falls	East Victoria	May 24
2.	Bobcaygeon	East Victoria	May 25
3.	Omemee	East Victoria	May 26
4.	Reaboro	West Victoria	May 27
5.	Valentia	West Victoria	May 28
6.	Little Britain	West Victoria	May 30
7.	Lindsay	West Victoria	May 31
8.	Woodville	West Victoria	June 1
9.	Falkenburg	South Muskoka	June 2
10.	Beatrice	South Muskoka	June 3
11.	Ziska	South Muskoka	June 4
12.	Muskoka Falls	South Muskoka	June 6
13.	Macaulay	South Muskoka	June 7
14.	Churchill	South Simcoe	June 8
15.	Thornton	South Simcoe	June 9
16.	Cookstown	South Simcoe	June 10
17.	Bond Head	South Simcoe	June 11

Division X.

Mrs. Jean Joy, 317 Brunswick Avenue, Toronto.

Miss J. Evans, Guelph.

1.	Warsaw	East Peterboro	May 24
2.	Lakefield	West Peterboro	May 25
3.	Mount Pleasant	East Durham	May 26
4.	Millbrook	East Durham	May 27
5.	Garden Hill	East Durham	May 28
6.	Columbus	South Ontario	May 30
7.	Whitby	South Ontario	May 31
8.	Greenbank	South Ontario	June 1
9.	Uxbridge	North Ontario	June 2
10.	Stouffville	East York	June 3
11.	Markham	East York	June 4
12.	Whitevale	South Ontario	June 6
13.	Box Grove	East York	June 7
14.	Agincourt	East York	June 15
15.	Thornhill	East York	June 17

Division XI.

Miss Blanche Maddock, Guelph.

Miss Mary Bell, St. George.

1.	Adolphustown	Lennox	May 24
2.	Sillsville	Lennox	May 25
3.	Stella	Amherst Island	May 26
4.	Marlbank	East Hastings	May 27
5.	Marysville	East Hastings	May 28
6.	Lonsdale	East Hastings	May 30
7.	Read	East Hastings	May 31
8.	Halston P. O.	East Hastings	June 1
9.	Canifton	East Hastings	June 2
10.	Gilbert's School House	West Hastings	June 3
11.	Wallbridge	West Hastings	June 4
12.	Frankford	West Hastings	June 6
13.	Bayside	West Hastings	June 7
14.	Wooler	East Northumberland	June 8
15.	York Road S. H.	East Northumberland	June 9
16.	Brighton	East Northumberland	June 10

Division XII.

17. Hilton ..... East Northumberland ..... June 11
18. Cobourg ..... West Northumberland ..... June 13
19. Grafton ..... West Northumberland ..... June 14
20. Coldsprings ..... West Northumberland ..... June 15
21. Queensboro ..... North Hastings ..... June 16
22. Springbrook ..... North Hastings ..... June 17
23. Ivanhoe ..... North Hastings ..... June 18

Meetings Attended by Miss B. Maddock.

1. Lanark Village ..... North Lanark ..... June 21
2. Richmond ..... Carleton ..... June 22
3. Foresters' Falls ..... North Renfrew ..... June 24
4. Beachburg ..... North Renfrew ..... June 25

ANNUAL REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1904.

PART III. MEETINGS AND STATISTICS.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

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FARMERS' INSTITUTES OF ONTARIO

1904-1905

ANNOUNCEMENT OF SUPERINTENDENT.

The history of Farmers' Institute work as carried on in Ontario during the year 1903-4 will be found in this volume; also an outline of the work to be undertaken during the coming winter. The subject matter is presented under the following headings, viz.—

STATISTICS. This is a record in concise form of the work of the Institutes during the year ending June 30th, 1904.

MEETINGS. The general plan of arranging meetings during the past few years has been followed in planning the work for the coming season. The number of meetings arranged for is more than during any other year in the history of the Institutes. A few Institutes have been in the habit of holding an afternoon session in one place and an evening session in another place several miles distant. These institutes have been advised to hold both the afternoon and evening sessions in one place, rather than in two places on the same day. This has somewhat lessened the number of places at which meetings would have been held had all requests been granted. In several cases Saturday meetings have been cancelled; especially in those districts near large cities, where the farmers are in the habit of going to market every Saturday.

SPEAKERS' SUBJECTS. Some changes will be noticed in the list of speakers and subjects. Several of our well-known speakers have been secured to undertake work in other provinces and states, while some of the others find it impossible to attend Institutes this year. This has made it necessary for us to secure several new speakers. Every care has been exercised in their selection, and it is hoped that their services will be acceptable to the various Institutes visited.

INSTITUTE OFFICERS. It is gratifying to know that the great majority of Institute officers this year are men who have been connected with the work for a number of years. This is particularly desirable so far as the Secretary is concerned, as he is really the executive head of the local work. It is well to see that the offices of President and Vice-President are held by farmers in various parts of the riding from year to year. Working directors should be retained from year to year, but if they fail to look closely after the duties entrusted to them their places should be filled by others.

RULES AND REGULATIONS. The rules and regulations governing Farmers' Institutes were published in Part III., of last year's report, and as all officers should have a copy of this in their possession, we thought it unwise to reprint the rules this year. All officers and directors should make themselves thoroughly familiar with the rules and regulations.

GEO. A. PUTNAM.

REPORTS OF LOCAL FARMERS' INSTITUTES

No.	INSTITUTE DISTRICT.	Membership, December, 1902.	Membership to June, 1901.	No. of meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts. Cash on hand per last report.	Members' fees.	Grants.	Receipts from excursions.	Miscellaneous.	Balance due Treasurer
							$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1	Addington	80	71	5	573	20	35 11	17 75	50 00			
2	Algoma Centre	76	73	5	317	15	93 76	19 00	50 00			
3	Algoma, East	107	108	8	370	18	22 92	30 00	25 00			
4	Amherst, Island	50	50	5	607	10	74 56	12 50	50 00			
5	Brant, North	93	139	8	847	27	108 51	35 00	50 00	74 26		
6	Brant, South	364	344	14	1,335	64	167 74	85 50	50 00	74 41		
7	Brockville	127	150	7	975	28	85	37 25	50 00			
8	Bruce, Centre	119	93	8	624	29	188 20	30 25	50 00	100 08		
9	Bruce, North	175	149	6	156	9	249 85	28 75	50 00	64 25	14 06	
10	Bruce, South	198	217	9	3,575	40	226 55	51 00	50 00	92 77		
11	Bruce, West	280	274	11	964	19	207 76	68 50	25 00	123 50	5 00	
12	Carleton	218	129	7	917	30	37 54	54 25	50 00			
13	Cornwall	84	87	4	665	16	7 10	21 75	50 00			
14	Dufferin	316	248	10	982	54	124 26	58 00	25 00	175 00	1 24	
15	Dundas	197	199	8	1,437	29	218 49	48 50	49 85		7 34	
16	Durham, East	153	244	7	659	14	6 21	62 50	50 00	40 00		
17	Durham, West	214	103	10	375	15	135 04	26 00	50 00	89 67	4 50	
18	Elgin, East	216	304	7	711	22	117 11	74 75	50 00	83 20	4 78	
19	Elgin, West	210	159	7	710	36	42 94	36 75	50 00			
20	Essex, North	119	107	6	722	32	5 86	26 75	50 00			
21	Essex, South	257	199	8	829	39	73 82	50 75	50 00			
22	Frontenac	104	89	7	1,088	25	58 14	21 00	75 00			
23	Frontenac, Centre	66	111	5	450	8		22 10	75 00			
24	Glengarry	168	259	7	1,680	22		64 50	50 00	35 13	5 00	
25	Grenville, South	208	163	14	606	30	23 70	41 50	50 00		1 87	
26	Grey, Centre	167	171	7	845	29	51 68	39 40	50 00	125 88		
27	Grey, North	353	318	11	983	42	143 19	76 50	50 00	49 00	9 38	
28	Grey, South	296	295	10	1,945	24	272 13	74 25	50 00	274 25	103 45	
29	Haldimand	305	287	8	806	34	417 89	93 75	50 00	216 20	17 31	
30	Halton	848	693	13	3,033	27	54	178 35	50 00	295 00		
31	Hastings, East	252	151	8	695	14	9 20	37 50	65 00			
32	Hastings, North	508	498	19	2,180	64		100 50	50 00			33 85
33	Hastings, West	108	74	6	831	15	51 50	18 75	50 00			
34	Huron, East	455	354	13	2,797	57	176 16	87 50	50 00	143 40	3 36	
35	Huron, South	188	204	9	1,690	49	309 12	46 50	50 00	152 10	17 95	
36	Huron, West	294	245	8	1,165	46	89 89	53 50	50 00	118 00		
37	Kent, East	321	210	7	718	22	3 56	49 50	50 00		03	
38	Kent, West	207	189	9	650	25	66 53	52 25	50 00			
39	Lambton, East	194	160	9	805	31	170 80	39 00	50 00	79 55	5 95	
40	Lambton, West	344	384	10	651	46	149 79	85 75	50 00	92 97		
41	Lanark, North	253	192	11	963	34		48 75	50 00		1 59	11 38
42	Lanark, South	114	194	6	940	28		48 50	50 00			6 93
43	Leeds, N. & Grenville N.	95	134	10	866	34	7 82	33 50	50 00		3 90	13 40
44	Leeds, South	308	244	8	1,520	48		61 00	50 00			13 91
45	Lennox	146	103	10	539	28	114 20	25 75	50 00			
46	Lincoln	296	247	7	950	34	151 30	73 00	55 00	30 00		
47	Manitoulin, East	130	125	7	874	24	26 65	31 00	25 00		1 00	
48	Manitoulin, West	98	92	8	420	15	23 55	21 50	25 00			
49	Middlesex, East	403	344	12	1,875	48	214 96	89 75	50 00	131 90	7 06	
50	Middlesex, North	272	344	12	1,537	58	291 35	83 25	50 00	149 70	5 12	
51	Middlesex, West	234	205	7	1,055	30	14 91	50 75	50 00	65 56		4 47
52	Monck	320	172	8	715	25	5 06	40 50	55 00			
53	Muskoka, Centre	64	49	6	289	9	23 71	13 25	25 00			
54	(Port Carling & Bala) (Branch C. Muskoka).	27	35	3	224	10	2 01	8 75				
55	Muskoka, North	211	174	8	342	44	18 08	52 00	25 00			
56	Muskoka, South	108	73	5	183	17	102 76	19 00	50 00		2 27	
57	Nipissing, West	70	75	5	214	17	5 52	17 25	25 00			
58	Norfolk, North	413	355	12	1,769	76	95 51	86 50	50 00	161 00		
59	Norfolk, South	207	172	8	904	30		41 25	50 00	72 02	11 00	
60	Northumberland, East	253	181	7	1,732	32	4 83	44 75	50 00	20 15	51 05	
61	Northumberland, West	114	86	6	1,040	13	67 67	20 50	50 00	17 06	4 25	
62	Ontario, North	561	339	9	535	38	149 97	70 20	25 00	434 90	6 75	
63	Ontario, South	495	421	17	1,375	55	122 90	106 50	50 00	83 19	5 65	
64	Oxford, North	309	202	9	995	21	62	67 75	50 00			
65	Oxford, South	566	476	12	2,645	63	65 35	138 50	50 00	160 00	3 20	
66	Parry Sound, East	291	276	16	1,099	53	81 91	72 50	52 00	153 45	5 10	
67	Parry Sound, West	140	75	6	180	23	28 21	15 50	35 00		8 00	
68	Peel	632	493	13	1,621	55	175 25	124 00	50 00	219 50	2 50	
69	Perth, North	317	300	10	1,912	42	292 39	74 25	50 00	154 05	88 60	
70	Perth, South	255	328	8	2,121	32	238 05	80 00	50 00	119 25		
71	Peterboro', East	160	117	7	1,502	42	23 19	26 50	50 00	40 00		
72	Peterboro', West	183	171	8	1,557	42	20	42 75	50 00	40 00	12 35	
73	Prescott	135	82	5	435	20	44 70	13 25	50 00		15 70	
74	Prince Edward	251	178	13	804	27	68 33	62 50	50 00		1 90	
75	Renfrew, North	114	86	5	797	10	27 23	24 00	50 00			

FOR YEAR ENDING 30TH JUNE, 1904.

Expenditure.

Total receipts.	Due treasurer per last report.	Exp nse for meetings.	Secretary's salary and Directors' expenses, etc.	Postage and Stationery.	Printing.	Advertising.	Lecturers' expenses.	Periodicals for members.	Miscellaneous.	Balance on hand.	Total	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
102 86		11 00	20 00	6 90	8 00	2 00	8 61		6 00	40 35	102 86	1
162 76		15 00	15 00	3 65	7 25	8 50			11 50	101 86	162 76	2
77 92		5 00	29 50	75		5 50	5 00			32 17	77 92	3
137 06		22 81	10 00	4 15		5 25			10 00	84 85	137 06	4
267 77		74 10	23 25	6 61		20 15	12 58		15 00	115 08	267 77	5
377 65		21 00	90 90	5 50		30 40	56 75		64 24	108 86	377 65	6
88 10		9 00	20 00	6 21	4 50	2 00	23 28		12 25	10 86	88 10	7
368 53		66 75	32 90	5 00		24 00	23 10		17 00	199 78	368 53	8
406 91		70	27 54	6 72	13 75	2 00		172 46		183 74	406 91	9
420 32		56 10	45 10	12 33	34 20	1 20	32 31		22 67	216 41	420 32	10
429 76		24 10	64 09	9 46	23 60	13 75	57 57	50 25	15 90	171 04	429 76	11
141 79		19 77	25 00	6 25		16 50			38	73 89	141 79	12
78 85		11 25	28 00	5 00	13 50				2 50	18 60	78 85	13
383 50		7 30	43 00	8 83	27 25	18 75	72 57		108 59	97 21	383 50	14
324 18		17 50	30 00	7 02		36 00	11 55		6 00	216 11	324 18	15
158 71		12 60	34 00	7 56	23 00		15 67		6 25	59 63	158 71	16
305 21		5 50	40 00	2 05		47 66	16 74		25 40	167 86	305 21	17
329 84		35 00	25 00	3 84	28 30	29 90	8 00		21 50	178 30	329 84	18
129 69		9 50	25 00	15 41	20 00	1 00	24 77		50	33 51	129 69	19
82 61		21 90	15 00	2 63	14 00	5 00	20 24		2 25	1 59	82 61	20
174 57		3 00	54 85	4 85	18 63		33 05			60 19	174 57	21
154 14		12 50	20 00	3 75	12 00	28 95	13 92			63 02	154 14	22
97 10		24 00	25 00	4 82	14 75		7 00			21 53	97 10	23
154 63	18 72	29 50	45 35	1 50	19 15		26 40		5 00	9 01	154 63	24
117 07		21 25	34 00	4 18	11 50	1 25	24 00		9 80	11 09	117 07	25
266 96		46 55	20 00	6 30	16 50	3 50	18 44		5 00	150 67	266 96	26
328 07		45 45	77 40	10 42	38 05		29 35		5 00	122 40	328 07	27
774 08		48 70	150 90	9 37	33 00	25 5	11 20	100 35	120 64	274 42	774 08	28
795 15		16 00	84 75	33 90	66 00	26 00	45 90		7 40	515 20	795 15	29
523 89		100 85	68 05	12 55	58 50		81 47		101 95	100 52	523 89	30
111 70		12 00	35 00	8 00	14 25		31 00		5 00	6 45	111 70	31
184 35	22 75	5 00	50 00	5 52	32 13		68 50		45		184 35	32
120 25		8 50	30 00	3 50		10 25	8 13			59 87	120 25	33
460 42		67 35	63 00	12 87	24 25	8 15	69 55		34 37	180 88	460 42	34
575 68		83 40	30 00	8 15		20 05	15 00		35 01	381 07	575 68	35
311 39		57 70	59 25	31 04	13 15	20 80	31 75		22 00	66 70	311 39	36
103 09		8 50	20 00	20 25	16 25	2 75	19 89		9 25	6 20	103 09	37
168 78		27 30	20 00	10 65	14 38	3 00	18 64		26 00	48 81	168 78	38
345 30		35 85	30 00	4 75		7 00			5 00	262 70	345 30	39
378 51		63 05	48 80	3 10	26 68	7 42	21 57		5 00	202 89	378 51	40
111 58	6 59	20 25	17 25	4 34		48 10	15 05				111 58	41
105 43	12 15	5 00	25 00	1 50		31 00	12 35		18 43		105 43	42
138 62		65 45	10 00	2 82		19 00			41 25		138 62	43
124 91	8 04	76 60	15 00	2 35	9 00	1 00	11 92		1 00		124 91	44
189 95		31 50	17 50	1 00	16 50		43 99		10 00	69 46	189 95	45
309 30		6 50	30 00	7 40	34 20	30 90	23 95		5 00	171 35	309 30	46
83 65		3 95	12 50	1 50	6 00		25 25		13 65	20 80	83 65	47
70 05		6 00	10 00	3 08	4 00	10				46 87	70 05	48
493 67		48 00	54 50	20 00		32 43	81 54	15 90	11 50	229 80	493 67	49
579 42		27 25	83 85	7 01	14 60	50	60 64		7 00	378 57	579 42	50
181 22		16 55	35 00	6 40	2 50	12 50	50 55		5 15	52 57	181 22	51
105 03		19 85	27 00	3 09	6 75	11 50	32 74		4 10		105 03	52
61 96		12 50	13 00	3 50	4 50		10 00		2 90	15 56	61 96	53
10 76				3 28	1 75					35	5 38	10 76	54
95 08		38 45	36 00	2 43	7 50	1 00			5 19	4 51	95 08	55
174 03		27 05	55 70	5 34		14 50			46 75	24 69	174 03	56
47 77		6 50	28 25	2 50	7 00	2 00			50	1 02	47 77	57
393 01		76 50	50 00	10 54	35 50		55 75		16 25	148 47	393 01	58
174 27	35 79	10 25	35 00	3 71	14 00		27 18		23 60	21 74	174 27	59
170 78		34 50	30 15	5 78	26 35		13 53		47 50	12 97	170 78	60
159 48		22 50	18 00	4 80	17 50		18 46		25	77 97	159 48	61
686 82		91 90	141 00	9 00	69 80	5 00	49 81		68 00	252 31	686 82	62
368 24		72 50	55 00	33 00	22 00	11 70	63 24		11 00	99 80	368 24	63
118 37		18 80	20 00	6 67	9 50	17 45	29 48		12 20	3 57	118 37	64
417 05		60 80	55 00	37 55	3 00	38 86	102 40		52 70	57 74	417 05	65
364 96		146 23	44 50	6 90		24 60	9 40		5 50	127 83	364 96	66
86 71		34 50	15 00	5 00	6 00	1 00				25 21	86 71	67
571 25		217 38	110 16	10 62	76 00			75 65	5 00	76 44	571 25	68
659 29		57 07	60 95	6 93	24 00	62 71	56 50	83 65	67 60	239 79	659 29	69
487 30		87 80	20 00	23 00	14 00	19 18	75 48		13 35	234 49	487 30	70
139 69		88 20	22 00	2 00	25 17		17 78		25 00	9 54	139 69	71
145 30		32 00	25 00	7 10	24 35	23 50	12 71		15 75	4 89	145 30	72
123 65		5 00	20 00	1 22	13 30	4 25	13 92		10 00	55 96	123 65	73
182 73		7 10	20 00	3 47		23 39	55 11			73 66	182 73	74
101 23		20 60	25 00	8 00	6 75		6 56			34 32	101 23	75

REPORTS OF LOCAL FARMERS' INSTITUTES

No.	INSTITUTE DISTRICT.	Membership, December, 1903.	Membership to June, 1904.	No. of meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.—*Continued* Cash on hand per last report.	Members' Fees.	Grants.	Receipts from excursions.	Miscellaneous.	Balance due Treasurer.
							$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
76	Renfrew, South	226	160	11	927	44	122 25	41 75	50 00	72 70		27 93
77	Russell	126	156	6	1,520	27	3 62	22 75	50 00			
78	Simcoe, Centre	309	285	9	1,092	52	174 10	55 20	75 00	255 75		
79	Simcoe, East	205	96	5	586	15	107 99	34 25	75 00	118 10	9 60	
80	Simcoe, South	180	185	7	543	14		41 50	75 00	9 46		
81	Simcoe, West	292	219	8	1,087	49	181 14	65 50	50 00	477 22	4 50	
82	Stormont	189	193	7	1,365	34		48 00	50 00			
83	St. Joseph Island	243	270	7	1,077	25	41 79	67 00	58 38			
84	Victoria, East	220	194	7	1,317	31		55 00	50 00	6 00	28 25	
85	Victoria, West	157	120	6	552	37	07	38 10	50 00	39 72		
86	Waterloo, North	440	546	13	2,980	68	203 52	134 75	50 00	58 37		
87	Waterloo, South	721	720	17	3,191	72	213 25	181 25	50 00	155 85	8 79	
88	Welland	226	305	9	1,195	50	175 86	64 25	50 00	141 80		
89	Wellington, Centre	538	433	7	1,351	29	81 09	108 50	50 00	25 40		
90	Wellington, East	208	214	9	625	33		53 75	50 00	6 30		
91	Wellington, South	155	229	10	1,125	18	138 88	328 75	50 00		11 31	
92	Wellington, West	374	250	8	1,466	33	174 16	82 00	50 00	60 93		
93	Wellington (Union Br.)	165	192	6	965	17	92 00	47 50	27 50	24 35		
94	Wentworth, North	384	329	9	1,950	32	26 98	82 25	50 00			
95	Wentworth, South	371	345	9	2,222	49	117 50	87 50	50 00	63 90		
96	York, East	253	256	10	931	32	41 28	52 75	50 00	181 10		
97	York, West	233	208	9	915	52	140 85	57 25	50 00	105 00		
	Total	28,799	21,257	883	106,719	3,165	8,662 52	5,685 85	4,697 73	6,382 30	530 58	111 82

ATTENDANCE, MEMBERSHIP, ETC., 1903-1904.

As expected before the returns for 1903-1904 were received, there has been a decrease in the number of meetings held, as well as in the attendance and membership. Owing to the unprecedented severity of the winter during the Institute campaign, many meetings had to be cancelled entirely, while the attendance at many was seriously interfered with. As the majority of the members join the Institute at the time of the winter meetings, a poor attendance is naturally followed by a decrease in membership. We are glad to note, however, after receiving full returns, that the reports do not show as great a decrease in any department as was expected by the speakers and some of the officers.

The Institutes holding the largest number of meetings during the year ending June 30th 1904, are:—

Hastings, N.	19	Waterloo, N.	13	Durham, W.	10
Ontario, S.	17	Middlesex, E.	12	Grey, S.	10
Waterloo, S.	17	Middlesex, N.	12	Lambton, W.	10
Parry Sound, E.	16	Norfolk, N.	12	Leeds, North and Grenville, North	10
Brant, S.	14	Oxford, S.	12	Lennox	10
Grenville, S.	14	Bruce, W.	11	Perth, N.	10
Halton	13	Grey, N.	11	Wellington, S.	10
Huron, E.	13	Lanark, N.	11	York, E.	10
Peel	13	Renfrew, S.	11		
Prince Edward	13	Dufferin	10		

The Institutes having the largest attendance at their meetings are as follows:

	No. of Meetings.	Attendance.		No. of Meetings.	Attendance.
Bruce, S.	9	3,575	Oxford, S.	12	2,645
Waterloo, S.	17	3,191	Wentworth, S.	9	2,222
Halton	13	3,033	Hastings, N.	19	2,180
Waterloo, N.	13	2,980	Perth, S.	8	2,121
Huron, E.	13	2,797	Grey, S.	10	1,845

FOR YEAR ENDING 30TH JUNE, 1904.—*Continued.*

Total receipts.	Due treasurer per last report.	Expenditure.—*Continued.* Expense for meetings.	Secretary's salary and Directors' expenses, etc.	Postage and stationery.	Printing.	Advertising.	Lecturers' expenses.	Periodicals for members.	Miscellaneous.	Balance on hand.	Total.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
286 70		9 00	20 00	2 99	13 50	48 12	21 45		35 25	136 39	286 70	76
104 30		8 00	35 50	8 00	8 50		44 30				104 30	77
560 05		80 25	96 60	12 81	52 55	1 50	32 76		41 40	242 18	560 05	78
344 94		90 05	35 00	4 50			80 34		10 83	124 22	344 94	79
125 96	1 94	17 00	15 00	5 18		20 75	20 53		18 60	26 96	125 96	80
778 36		107 45	66 40	6 93	34 14		39 27	43 05	65 00	416 12	778 36	81
98 00	20 61	18 00	33 00	2 50	16 50				2 50	4 89	98 00	82
167 17		15 87	10 00	4 70	11 98	1 00			82 72	40 90	167 17	83
139 25	12 26	42 00	20 00	10 54	22 25		25 33		6 15	72	139 25	84
127 89		16 03	25 00	10 91	27 00	16 08		8 47	5 00	19 40	127 89	85
446 64		39 25	70 00	16 42	35 25	19 75	64 41		27 61	173 95	446 64	86
609 14		109 11	125 00	11 95	66 35		76 83		133 97	85 93	609 14	87
431 91		58 30	65 45	5 40	10 00	1 00	40 71		35 30	217 75	431 91	88
264 99		48 33	40 65	9 30	16 00	9 75			18 25	122 71	264 99	89
110 05	4 32	5 65	25 00	3 00		20 75	25 88	13 80	5 75	5 90	110 05	90
528 94		20 25	50 00	6 72		26 95	4 52		304 00	116 50	528 94	91
367 09		52 35	32 00	4 75		24 25	22 03		48 00	183 71	367 09	92
191 35		16 00	24 00	10 07	12 50	4 00	4 55		27 18	93 05	191 35	93
159 23		24 60	35 00	13 57		27 50	49 39		5 00	4 17	159 23	94
318 90		69 21	53 55	15 70		56 91	10 00		26 20	87 33	318 90	95
325 13		26 62	37 25	16 71	34 30	3 75	17 48		46 90	142 12	325 13	96
353 10		39 00	54 10	10 00	53 75	1 00	31 55		93 50	70 20	353 10	97
25,990 80	143 17	3,531 68	3,813 44	780 92	1,562 61	1,163 41	2,550 12	565 58	2,331 17	9,550 70	25,990 80	

The Institutes having the largest membership to July, 1904, are:—

Waterloo, S.	720	Lambton, W.	384	**Ontario, N.**	339
Halton	693	**Norfolk, N.**	355	**Wentworth, N.**	329
Waterloo, N.	546	Huron, E.	354	Perth, S.	328
Peel	493	Wentworth, S.	345	Grey, N.	318
Oxford, S.	476	**Brant, S.**	344	Welland	306
Wellington, C.	433	Middlesex, E.	344	Elgin, E.	304
Ontario, S.	421	Middlesex, N.	344	**Perth, N.**	300
Hastings, N.	408				

The following Institutes show the smallest membership:—

Port Carling	35	Hastings, W.	74	Cornwall	87
Muskoka, C.	49	Nipissing, W.	75	Frontenac	89
Amherst Island	50	Parry Sound, W.	75	Manitoulin, W.	92
Addington	71	Prescott	82	Bruce, C.	93
Algoma, C.	73	Northumberland, W	86	**Simcoe, E.**	96
Muskoka, S.	73	Renfrew, N.	86		

INSTITUTE MEETINGS AND DELEGATES THEREFOR.

REGULAR MEETINGS.

DIVISION 1: W. F. Kydd; Gavin Barbour, Jan. 30 to Feb. 16 and Feb. 23 to 25; Miss Lilian Gray, Feb. 17 to 22.

1	Kincardine, Town Hall	Centre Bruce	January	30
2	Ripley, Township Hall	Centre Bruce	"	31
3	Dungannon, Agricultural Hall	West Huron	February	1
4	Auburn, Temperance Hall	West Huron	"	2
5	Brussels, Town Hall	East Huron	"	3
6	Wroxeter, Town Hall	East Huron	"	4
7	Teeswater, Town Hall	South Bruce	"	6
8	Lavery's School House	Union	"	7
9	Lakelet, Temperance Hall	Union	"	8
10	Cargill, Public Library	South Bruce	"	9
11	Port Elgin, Town Hall	West Bruce	"	10
12	Tara, VanDuzer's Hall	West Bruce	"	11
13	Hepworth, School House	North Bruce	"	13
14	Wiarton, Town Hall	North Bruce	"	14
15	Hanover, Telford's Hall	South Grey	"	15
16	Durham, Town Hall	South Grey	"	16
17	Farewell, School House	East Wellington	"	17
18	Cedarville, Orange Hall	East Wellington (aft.)	"	18
19	Conn, Orange Hall	East Wellington (eve.)	"	18
20	Glenallan, Coot's Hall	West Wellington	"	20
21	Drayton, Town Hall	West Wellington	"	21
22	Palmerston, Town Hall	West Wellington	"	22
23	Cumnock, School House	Centre Wellington	"	23
24	Marsville, Anthony's Hall	Centre Wellington	"	24
25	Erin, Town Hall	Centre Wellington	"	25
26	Honeywood, Workmen's Hall	Dufferin	"	27
27	Perm, Orange Hall	Dufferin	"	28
28	Horning's Mills, Workmen's Hall	Dufferin	March	1
29	Riverview	Dufferin	"	2
30	Relessy, Orange Hall	Dufferin	"	3
31	Laurel, Orange Hall	Dufferin	"	4

DIVISION 2: Fred. A. Sheppard; John Donaldson, Feb. 17 to Mar. 7; Miss Blanche Maddock, A. B. McDonald, Jan. 31 to Feb. 11; John Campbell, Feb. 13 to 16.

1	Thamesville, Town Hall	East Kent	January	31
2	Tecumseh, St. John's Hall	North Essex	February	1
3	Essex, Town Hall	South Essex	"	2 &
4	Woodslee, St. Lawrence Hall	North Essex	"	4
5	Valetta, Township Hall	West Kent	"	6
6	Romney, Township Hall	West Kent	"	7
7	Rodney, McCallum's Hall	West Elgin	"	8
8	Highgate, Township Hall	East Kent	"	9
9	Dutton, Town Hall	West Elgin	"	10
10	Shedden	West Elgin	"	11
11	Melbourne, Woodmen's Hall	West Middlesex (aft.)	"	13
12	Middlemiss, Town Hall	West Middlesex (eve.)	"	13
13	Walker's School House	West Middlesex	"	14
14	Brigden, McKenzie's Hall	West Lambton	"	15 & 16
15	Petrolea, Council Chamber	West Lambton	"	17
16	Wyoming, Butler's Hall	East Lambton	"	18
17	Thedford, McKenzie's Hall	East Lambton	"	20
18	Brucefield, Dixon's Hall	South Huron	"	21
19	Exeter, Town Hall	South Huron	"	22
20	Parkhill, Town Hall	North Middlesex	"	23
21	Ailsa Craig, Town Hall	North Middlesex	"	24
22	Beechwood, Orange Hall	North Middlesex	"	25
23	Coldstream, Town Hall	North Middlesex	"	27
24	Ilderton, I.O.O.F. Hall	East Middlesex	"	28
25	Wilton Grove, Presby. S. S. R.	East Middlesex	March	1
26	Kintore, Foresters' Hall	North Oxford	"	2
27	St. Marys, Town Hall	South Perth	"	3
28	Mitchell, Town Hall	South Perth	"	6
29	Bright, Duncan's Hall	North Oxford	"	7

Feb. 28 to Mar. 6; Miss Gertrude Carter, Feb. 11 to 13.

DIVISION 4: G. H. Hutton, B.S.A; J. L. Hilborn, Jan. 31 to Feb. 27; Robt. Miller,

1	Scotland, Foresters' Hall	South Brant	January	31
2	Ohsweken, Council Hall	South Brant	February	1
3	Ancaster, Town Hall	South Wentworth	"	2
4	Stoney Creek, New Hall	South Wentworth	"	3
5	Campden, Fry's Hall	Lincoln	"	4

DIVISION 4.—*Continued.*

6	St. David's School House	Lincoln	February	6
7	Niagara Falls, Town Hall	Welland	"	7
8	Humberstone, Town Hall	Welland	"	8
9	Pelham Centre, Town Hall	Monck	"	9
10	Canboro', Town Hall	Monck	"	10
11	Kohler, Kohler Hall	Haldimand	"	11
12	Caledonia Association	Haldimand	"	13
13	Onondaga, Township Hall	North Brant	"	14
14	St. George	North Brant	February	15
15	Waterford, Town Hall	North Norfolk	"	16
16	Bealton, Bealton Hall	North Norfolk	"	17
17	Delhi, Morgan's Hall	North Norfolk	"	18
18	Courtland, Town Hall	North Norfolk	"	20
19	Langton, Town Hall	South Norfolk	"	21
20	Vittoria, Lecture Room	South Norfolk	"	22
21	Aylmer, Town Hall	East Elgin	February 23 &	24
22	Norwich Town Hall	South Oxford	February	25
23	Mount Elgin, Foresters' Hall	South Oxford	"	27
24	Morriston	South Wellington (aft.)	"	28
25	Aberfoyle	South Wellington (eve)	"	29
26	Speedside	South Wellington (eve.)	March	1
27	Breslau, Old Church	South Waterloo	"	2
28	Waterloo, Town Hall	North Waterloo	"	3
29	New Hamburg, Wm. Tell Hall	South Waterloo	"	4
30	Wellesley, Town Hall	North Waterloo	"	6

DIVISION 6: T. H. Mason: Harold Jones, Feb. 10 to Mar. 10; Anson Groh, Jan. 31 to Feb. 9.

1	Feversham, Orange Hall	Centre Grey (aft.)	January	31
2	Maxwell, Orange Hall	Centre Grey eve.)	"	31
3	Badjeros, Orange Hall	Centre Grey	February	1
4	Dundalk, Town Hall	Centre Grey	"	2
5	Ventry, School House	Centre Grey	"	3
6	Priceville, Watson's Hall	Centre Grey	"	4
7	Markdale, Marsh's Hall	Centre Grey	"	6
8	Holland Centre, Price's Hall	Centre Grey	"	7
9	Walter's Falls, Oddfellows' Hall	Centre Grey	"	8
10	Rocklyn, Township Hall	Centre Grey	"	9
11	Kimberley, Union Church	Centre Grey	"	10
12	Ravenna, Township Hall	Centre Grey	"	11
13	Banks	Centre Grey	"	13
14	Thornbury, Town Hall	Centre Grey	"	14
15	Meaford, Town Hall	North Grey	"	15
16	Snyder's, School House	North Grey	"	16
17	Stayner, Council Chamber	West Simcoe	" 17 &	18
18	New Lowell, Town Hall	West Simcoe	"	20
19	Midhurst, Patron's Hall	Centre Simcoe	"	21
20	Minesing, Workmen's Hall	Centre Simcoe	"	22
21	Russelton, Church Hall	Centre Simcoe	"	23
22	Phelpston, Murphy's Hall	Centre Simcoe	"	24
23	Elmvale, Drysdale Hall	Centre Simcoe	"	25
24	Allenwood	Centre Simcoe	"	27
25	Wyevale, Orange Hall	Centre Simcoe	"	28
26	Lafontaine, Gignac's Hall	Centre Simcoe	March	1
27	Penetang, Town Hall	Centre Simcoe	"	2
28	Vasey, Orange Hall	Centre Simcoe	"	3
29	Georgetown	Halton	"	6
30	Nassagaweya, Township Hall	Halton	"	7
31	Waterdown, Township Hall	North Wentworth	"	8
32	Rockton, Township Hall	North Wentworth	"	9
33	Freelton, Maccabees' Hall	North Wentworth	"	10

DIVISION 7: J. W. Clark, Nov. 18 to 28; John Gardhouse, Nov. 18, 19, 29 to Dec. 2; Wm. Rennie, Nov. 23 and 24; D. Anderson, Nov. 29 to Dec. 2; Miss B. Maddock, Nov. 25 and 28; Miss L. Gray, Nov. 21 and 22.

1	Camilla, Workmen's Hall	Dufferin	November	18
2	Shelburne, Town Hall	Dufferin	"	19
3	Alton, Science Hall	Peel	"	21
4	Streetsville, Oddfellow's Hall	Peel	"	22
5	Woodbridge, Orange Hall	West York	"	23
6	Weston, Dufferin Hall	West York	"	24
7	York Mills, School House	East York	"	25
8	Agincourt, Temperance Hall	East York	"	28
9	Pickering, Fire Hall	South Ontario	"	29
10	Myrtle, Temperance Hall	South Ontario	"	30
11	South Monaghan, S. s. Hall	East Durham (aft)	December	1
12	Millbrook, Town Hall	East Durham (eve)	"	1
13	Janetville, Orange Hall	East Durham (aft)	"	2
14	Bethany, Town Hall	East Durahm (eve)	"	1

Division 8: W. F. Kydd, G. H. Hutton.

1	Madoc, Town Hall	North Hastings	November 21
2	Stirling, Music Hall	North Hastings	" 22
3	Menie, Lamb's Hall	East Northumberland	" 23
4	Warkworth, Town Hall	East Northumberland	" 24
5	Keene, Town Hall	East Peterboro	" 25
6	Norwood, Town Hall	East Peterboro	" 26
7	Lakefield, Town Hall	West Peterboro	" 28
8	Peterboro, Council Chamber	West Peterboro (aft)	" 29
9	North Monaghan, Town Hall	West Peterboro (eve)	" 29
10	Bobcaygeon, Town Hall	East Victoria	" 30
11	Fenelon Falls, Dickson's Hall	East Victoria	December 1
12	Lindsay, Town Hall	West Victoria	" 2
13	Woodville, Village Hall	West Victoria	" 3
14	Beaverton, Alexandra Hall	North Ontario	" 5
15	Uxbridge, Market Hall	North Ontario	" 6

Division 9: R. H. Field, E. C. Drury.

1	Blackstock	West Durham	November 21
2	Bowmanville, Royal Templars' Hall	West Durham (aft)	" 22
3	Courtice, Son's Hall	West Durham (eve)	" 22
4	Newtonville, Hall	West Durham (aft)	" 23
5	Newcastle, Town Hall	West Durham (eve)	" 23
6	Coldsprings, Township Hall	West Northumberland	" 24
7	Grafton, Town Hall	West Northumberland	" 25
8	Frankford, Curry's Hall	West Hastings	" 26
9	Wallbridge, Town Hall	West Hastings	" 28
10	Canifton, Town Hall	East Hastings	" 29
11	Marysville, School House	East Hastings	" 30
12	Newburgh, Finkle's Hall	Addington	December 1
13	Centreville, Town Hall	Addington	" 2

Division 10: D. Drummond, D. Z. Gibson.

1	Napanee, Town Hall	Lennox	November 19
2	Adolphustown, Town Hall	Lennox	" 21
3	Emerald, Cheese Factory	Amherst Island	" 22
4	Stella, Town Hall and Victoria Hall	Amherst Island	" 23
5	Joyceville, Joyce's Hall	Frontenac	" 24
6	Glenvale, Orange Hall	Frontenac	" 25
7	Parham, I. O. O. F. Hall	Central Frontenac	" 26
8	Fermoy, Town Hall	Central Frontenac	" 28
9	Elgin, Town Hall	South Leeds	" 29
10	Seeley's Bay, Select Knight's Hall	South Leeds	" 30
11	Mallorytown, Oddfellows' Hall	Brockville	December 1
12	Lyn, School House	Brockville	" 2

Division 11: C. W. Nash, D. M. Wilson.

1	Vankleek Hill, Town Hall	Prescott,	January 31 and February 1
2	Glen Robertson, Johnson Hall	Glengarry	" 2
3	Maxville, Public Hall	Glengarry	" 3
4	North Branch, School House	Cornwall	" 4
5	South Branch, Patron's Hall	Cornwall	" 6
6	Northfield, Town Hall	Cornwall	" 7
7	Osnabruck Centre, Town Hall	Stormont	" 8
8	Newington, Ranborough Hall	Stormont	" 9
9	Russell, Town Hall	Russell	" 10
10	Kenmore, Foresters' Hall	Russell	" 11
11	Chesterville, Foster's Hall	Dundas	" 13
12	Inkerman, A. O. U. W. Hall	Dundas	" 14

Division 12: Dr. Hy. G. Reed, W. F. Stephen.

1	Woodlawn, Town Hall	Carleton	November 18
2	Galetta, Temperance Hall	Carleton	" 19
3	Arnprior, Town Hall	South Renfrew	" 21
4	Renfrew, Temperance Hall	South Renfrew	" 22
5	Osceola, Town Hall	North Renfrew	" 23
6	Douglas, Town Hall	North Renfrew	" 24
7	Snow Road, Oddfellows' Hall	North Lanark (aft)	" 25
8	Elphin, Public Hall	North Lanark (eve)	" 25
9	McDonald's Corners, Agr. Hall	North Lanark	" 26
10	Perth, Town Hall	South Lanark	" 28
11	Smith's Falls, Town Hall	South Lanark	" 29
12	Merrickville, Town Hall	N. Leeds and Grenville N.	" 30
13	Oxford Mills, Town Hall	N. Leeds and Grenville N.	December 1
14	Spencerville, Town Hall	South Grenville	" 2
15	North Augusta, Carpenter's Hall	South Grenville	" 3

Division 15: C. W. Nash, L. E. Annis.

1	**Richard's Landing**	St. Joseph's Island	October	14
2	Kentvale	St. Joseph's Island	"	15
3	Carterton	St. Joseph's Island	"	17
4	Tenby Bay	St. Joseph's Island	"	18
5	Keskawan	St. Joseph's Island	"	19
6	Marksville	St. Joseph's Island	"	20
7	**Gore Bay, No. 4 School**	West Manitoulin (aft)	"	21
8	**Gore Bay, No. 1 School**	West Manitoulin (eve)	"	21
9	Barrie Island, School House	West Manitoulin (aft and eve)	"	22
10	**Kagawong, School House**	West Manitoulin (aft)	"	24
11	Kagawong, Village Hall	West Manitoulin (eve)	"	24
12	**Grimesthorpe, School House**	West Manitoulin	"	25
13	Poplar, School House	West Manitoulin	"	26
14	**Evansville, School House**	West Manitoulin	"	27
15	**Silver Water, School House**	West Manitoulin	"	28
16	**Meldrum, School House**	West Manitoulin	"	29

Special Series: W. F. Kydd, Fred. Herity.

1	**Millbridge, Town Hall**	North Hastings	December	8
2	**The Ridge, School House**	North Hastings	"	9
3	Coe Hill, Town Hall	North Hastings	"	10
4	Faraday, School House	North Hastings	"	13
5	L'Amable, Town Hall	North Hastings	"	13
6	Hermon, School House	North Hastings	"	14
7	Fort Stewart, Frederick's Hall	North Hastings	"	15
8	**Monteagle Valley, School House**	North Hastings	"	16
9	Maynooth, Town Hall	North Hastings	"	17
10	**Bancroft, Town Hall**	North Hastings	"	19
11	St. Ola, Clark's Hall	North Hastings	"	20

SUPPLEMENTARY MEETINGS.

Division 1: T. G. Raynor, A. E. Sherrington.

1	**Chatsworth, Town Hall**	North Grey (aft)	November	23
2	Desboro, Town Hall	North Grey (eve)	"	23
3	Kilsyth, Town Hall	North Grey	"	24
4	**Owen Sound, Council Chamber**	North Grey (aft)	"	25
5	Brown's School House	North Grey (eve)	"	26
6	Kemble, School House	North Grey	"	26
7	Boznor, Town Hall	North Grey	"	28
8	**Annan, Town Hall**	North Grey (aft)	"	29
9	Leith, Town Hall	North Grey (eve)	"	29
10	Chesley, Town Hall	Centre Bruce	"	30
11	Paisley, Town Hall	Centre Bruce	Decemb r	1
12	Pinkerton, Johnson's Hall	Centre Bruce	"	2
13	Glamis, Methodist Hall	Centre Bruce	"	3
14	**Armow, Township Hall**	Centre Bruce	"	5

Division 2: C. W. Nash, R. S. Stevenson.

1	**Gowanstown, Town Hall**	North Perth	Novemb r	21
2	Atwood, Town Hall	North Perth	"	22
3	Carthage, Town Hall	North Perth	"	3
4	**Milverton, Grosch's Hall**	North Perth	"	24
5	Millbank, Town Hall	North Perth	"	6
6	Monkton, Town Hall	North Perth	"	26
7	Rostock, Town Hall	North Perth	"	28
8	Gad's Hill, Hall	North Perth	"	29
9	Hampstead, School House	North Perth	"	30
10	Shakespeare, Temperance Hall	North Perth	December	1
11	Goderich	West Huron	"	2
12	Holmesville	West Huron	"	3
13	**St. Helens, Machinery Hall**	West Huron	"	5
14	Kintail, Young's Hall	West Huron	"	6

Division 3: Dr. H. G. Reed; J. L. Warren, Feb. 11 to Mar. 11; R. J. McMillan, Feb. 2 to 6; Mrs. Colin Campbell, Feb. 7 to 9.

1	Tiverton, Town Hall	West Bruce	February	2
2	Underwood, Town Hall	West Bruce	"	3
3	**Burgoyne, Church Vestry**	West Bruce (aft.)	"	4
4	Southampton, Town Hall	West Bruce (eve.)	"	4
5	Allenford, Orange Hall	West Bruce	"	6
6	Mar, School House	North Bruce	"	7
7	Spry, School House	North Bruce	"	8
8	Lion's Head, Town Hall	North Bruce	February	9
9	Elmwood, Melhausen's Hall	South Bruce and South Grey	"	11
10	Mildmay, Township Hall	South Bruce	"	13
11	Walkerton, Town Hall	South Bruce	"	14
12	**Belmore, Forester's Hall**	South Bruce	"	15
13	Lucknow, Town Hall	South Bruce	"	16
14	Holyrood, Township Hall	South Bruce	"	17
15	Harriston, Town Hall	Union	"	18
16	**Clifford, Town Hall**	Union	"	20
17	Drew, Temperance Hall	Union	"	21

DIVISION 3.—*Continued.*

18	Ayton, Doersam's Hall	South Grey	February	22
19	Holstein, Agricultural Hall	South Grey	"	23
20	Dromore, Russell Hall	South Grey	"	24
21	Elmville	South Huron	"	25
22	Crediton, Town Hall	South Huron	"	27
23	Grand Bend, Brenner's Hall	South Huron	"	28
24	Zurich, Town Hall	South Huron	March	1
25	Hensall, Miller's Hall	South Huron	"	2
26	Bayfield, Town Hall	South Huron	"	3
27	St. Columban	East Huron	"	4
28	Grieve's School House	East Huron	"	6
29	Harlock, School House	East Huron	"	7
30	Bluevale, Foresters' Hall	East Huron	"	8
31	Ethel, Town Hall	East Huron	"	9
32	Molesworth	East Huron	"	10
33	Fordwich, New Hall	East Huron	"	11

DIVISION 4: Robert Thompson, D. James.

1	Tavistock, Public Hall	South Perth	January	31
2	Sebringville, Foresters' Hall	South Perth	February	1
3	Fullarton, Township Hall	South Perth	"	2
4	Stalla, Public Hall	South Perth	"	3
5	Kirkton, Aberdeen Hall	South Perth	"	4
6	Granton, Harmony Hall	North Middlesex	"	6
7	Lucan, Town Hall	North Middlesex	"	7
8	Lobo, School House	North Middlesex	"	8
9	Adelaide, Town Hall	North Middlesex	"	9
10	Sylvan, Maccabees' Hall	North Middlesex	"	10
11	West McGillivray, Town Hall	North Middlesex	"	11
12	Greenway, Wilson's Hall	North Middlesex	"	13
13	Fuller's School House	East Lambton	"	14
14	Warwick, Town Hall	East Lambton	"	15
15	Forest, Town Hall	East Lambton	"	16
16	Camlachie, Bridge's Hall	East Lambton	"	17
17	Sarnia, Council Chamber	West Lambton (aft.)	"	18
18	Bunyan's School House	West Lambton (eve.)	"	18
19	Courtright, Stewart's Hall	West Lambton	"	20
20	Wilkesport, Hamilton's Hall	West Lambton	"	21
21	Becher, Foresters' Hall	West Lambton	"	22
22	Rutherford, Township Hall	West Lambton	"	23
23	Oakdale, School House	West Lambton	"	24
24	Inwood, Orange Hall	East Lambton	"	25
25	Shetland, Orange Hall	East Lambton	"	27
26	Alvinston, Order Hall	East Lambton	"	28

DIVISION 6: J. W. Clark, Feb. 1 to 27; A. C. Hallman, Feb. 3 to 11, and 18 to 27: A. B. McDonald, Feb. 13 to 17.

1	Princeton, Dake's Hall	North Oxford	February	1
2	Drumbo, Town Hall	North Oxford	"	2
3	Innerkip, Foresters' Hall	North Oxford	"	3
4	Hickson, Foresters' Hall	North Oxford (aft.)	"	4
5	Cassel, Town Hall	North Oxford (eve.)	"	4
6	Brooksdale, Foresters' Hall	North Oxford (aft.)	"	6
7	Embro, Foresters Hall	North Oxford (eve.)	"	6
8	Thamesford, Town Hall	North Oxford	"	7
9	Dorchester	East Middlesex	"	8
10	Harrietsville	East Middlesex	"	9
11	Glanworth	East Middlesex	"	10
12	Lambeth	East Middlesex	"	11
13	Hyde Park, School House	East Middlesex	"	13
14	Bryanston, Orange Hall	East Middlesex	"	14
15	Wellburn, German's Hall	East Middlesex	"	15
16	Thorndale, Harding's Hall	East Middlesex	"	16
17	Mount Brydges, Town Hall	West Middlesex	"	17
18	Arkwin, Town Hall	West Middlesex	"	18
19	Glencoe, Town Hall	West Middlesex	"	20
20	Wardsville, Town Hall	West Middlesex	"	21
21	Mosher's School House	North Norfolk	"	22
22	Simcoe, Council Chamber	North Norfolk	"	23
23	Tyrrell, Tyrrell's Hall	North Norfolk	"	24
24	Windham Centre, Town Hall	North Norfolk	"	25
25	Kelvin, Hall	North Norfolk	"	27

DIVISION 7: W. S. Fraser, W. E. A. Peer, L. H. Newman.

1	Corinth	East Elgin	January	31
2	Port Burwell, Oddfellows' Hall	East Elgin	February	1
3	Mount Salem, Royal Templars' Hall	East Elgin	"	2
4	Mapleton	East Elgin	"	3
5	Comal, Foresters' Hall	West Elgin	"	4
6	Middlemarch, Orange Hall	West Elgin	"	6
7	West Lorne, Town Hall	West Elgin	"	7

DIVISION 6.—*Continued.*

8	Duart	East Kent	February	8
9	Ridgetown, Town Hall	East Kent	"	9
10	Blenheim	East Kent	"	10
11	Croton	East Kent	"	11
12	Tupperville, Keith's School House	West Kent	"	13
13	Ebert's Township Hall	West Kent	"	14
14	Dover Centre, Foresters' Hall	West Kent	"	15
15	Union, Hall	West Kent	"	16
16	Comber, Town Hall	North Essex	"	17
17	Belle River, Town Hall	North Essex	"	18
18	Oldcastle	North Essex	"	20
19	Canard	North Essex	"	21
20	Amherstburg, Town Hall	South Essex	"	22
21	Harrow, Town Hall	South Essex	"	23
22	Kingsville, Town Hall	South Essex	"	24
23	Leamington, Town Hall	South Essex	"	25
24	Wheatley, Gibson's Hall	West Kent and South Essex	"	27 & 28

DIVISION 8: G. C. Caston; Chas E. Shearer, Jan. 30 to Feb. 2; George Carlaw, Feb. 11 to Mar. 3; Miss Lilian Gray, Jan. 30 to Feb. 10.

1	Smithville, Brant's Hall	Monck	January	30
2	Wellandport, Misener's Hall	Monck	"	31
3	Marshville, Town Hall	Monck	February	1
4	Dunnville, Town Hall	Monck	"	2
5	Canfield, Chosen Friends' Hall	Haldimand	"	3
6	York, Town Hall	Haldimand	"	4
7	Clanbrassil, School House	Haldimand	"	6
8	DeCewsville, Town Hall	Haldimand	"	7
9	Rainham, Town Hall	Haldimand	"	8
10	Cheapside, Town Hall	Haldimand	"	9
11	Nanticoke, Town Hall	Haldimand	"	10
12	Garnet, Town Hall	Haldimand	"	11
13	Port Dover, Town Hall	South Norfolk	"	13
14	St. Williams, Town Hall	South Norfolk	"	14
15	Fairground, Town Hall	South Norfolk	"	15
16	Tillsonburg, Council Chamber	South Oxford	"	16
17	Brownsville, Methodist S. S. R.	South Oxford	"	17
18	Springford, Town Hall	South Oxford	"	18
19	Otterville, Town Hall	South Oxford	"	20
20	Burgessville, Oddfellows' Hall	South Oxford	"	21
21	Oxford Centre, Town Hall	South Oxford	"	22
22	Ingersoll, Council Chamber	South Oxford	"	23
23	Beachville, Town Hall	South Oxford	"	24
24	Cathcart, Foresters' Hall	South Brant	"	25
25	Paris	South and North Brant	"	27 & 28
26	Burford, Cornish Hall	South Brant	March	1 & 2
27	Harley, Township Hall	South Brant	"	3

DIVISION 9: Elmer Lick; Erland Lee, Feb. 1 to 25; Miss Gertrude Carter, Feb. 1 to 9; Col. McCrae, Feb. 27 to Mar. 3; Miss Lilian Gray, Mar. 4 to 10; Mrs. Andrew Kinney, Feb. 13 to 14. Miss Bertha Duncan, Feb. 16 to 22.

1	Allanburg, Town Hall	Welland	February	1
2	Quacker Road School	Welland	"	2
3	Crowland, Town Hall	Welland	"	3
4	Air Line, School House	Welland	"	4
5	Willoughby, Town Hall	Welland	"	6
6	Ridgeway, Town Hall	Welland	"	7
7	Stevensville, Johnson's Hall	Welland	"	8
8	Brown Road, School House	Welland	"	9
9	Virgil, Public Hall	Lincoln	"	10
10	Grantham Township, Orange Hall	Lincoln	"	11
11	Jordan Station, Maccabees' Hall	Lincoln	"	13
12	Beamsville, Town Hall	Lincoln	"	14
13	Grimsby, Society Hall	Lincoln	"	15
14	Winona, New Hall	South Wentworth	"	16
15	Tapleytown, Old Church	South Wentworth	"	17
16	Binbrook, Town Hall	South Wentworth	"	18
17	Glanford, Town Hall	South Wentworth	"	20
18	Carluke, School House	South Wentworth	"	21
19	Jerseyville, Palmer's Hall	South Wentworth	"	22
20	Lynden, Keivel's Hall	North Wentworth	"	23
21	Scott's School House	North Wentworth (aft.)	"	24
22	Sheffield, Town Hall	North Wentworth (eve.)	"	24
23	Kirkwall, School House	North Wentworth	"	25
24	Westover, Oddfellows' Hall	North Wentworth	"	27
25	Millgrove, Town Hall	North Wentworth	"	28
26	Carlisle, Orange Hall	North Wentworth	March	1
27	Islington, Township Hall	West York	"	2
28	Elia, Foresters' Hall	West York	"	3

DIVISION 9.—*Continued.*

29	Kleinburg, Temperance Hall	West York	February		
30	Maple, Masonic Hall	West York	"	6	
31	Thornhill, Francis Hall	East York	"	7	
32	Unionville, Victoria Hall	East York	"	8	
33	Boxgrove, Foresters' Hall	East York	"	9	
34	Wexford, Methodist S. S. R.	East York	"	10	

DIVISION 10: Major James Sheppard; J. S. Pearce, Feb. 3 to 7, and Feb. 23 to Mar. 2; Miss Isabel Rife, Feb. 27 and Mar. 1 and 2.

1	Mulligan's School House	North Brant	February	3
2	Langford, Town Hall	North Brant (aft.)	"	4
3	Cainsville, Town Hall	North Brant (eve.)	"	4
4	White's School House	North Brant aft.)	"	6
5	Moyle's School House	North Brant eve.)	"	6
6	Man's School House	North Brant (aft.)	"	7
7	Glenmorris, Township Hall	North Brant (eve.)	"	7
8	Branchton, Foresters' Hall	South Waterloo	"	8
9	Galt, Town Hall	South Waterloo	"	9
10	Hespeler	South Waterloo	"	10
11	Preston, Town Hall	South Waterloo	"	11
12	Kossuth	South Waterloo	"	13
13	Ayr, McGregor's Hall	South Waterloo	"	14
14	Roseville, School House	South Waterloo	"	15
15	Strasburg	South Waterloo	"	16
16	Mannheim	South Waterloo	"	17
17	New Dundee	South Waterloo	"	18
18	Haysville	South Waterloo	"	20
19	Baden	South Waterloo	"	21
20	Phillipsburg	South Waterloo	"	22
21	Crosshill, Township Hall	North Waterloo	"	23
22	Heidelburg, Steiss Hall	North Waterloo	"	24
23	Elmira, E. M. S. Hall	North Waterloo	"	25
24	Winterbourne, Lecture Room	North Waterloo	"	27
25	Ennotville, Mechanics' Hall	Centre Wellington	"	28
26	Bellwood, Town Hall	Centre Wellington	March	1
27	Hillsburg, Town Hall	Centre Wellington	"	2

DIVISION 11: A. J. Reynolds, Jan. 31 to Feb. 6; John Campbell, Jan. 31 to Feb. 8; Thos. McMillan, Feb. 7 to 18; John Gardhouse, Feb. 20 to 22, and Feb. 24 to Mar. 9; Ralph S. Eaton, Feb. 9 to Mar. 9; Miss Isabel Rife, Feb. 7 and 9 to 18; C. W. McDougall, Feb. 23; Miss G. Gray, Mar. 1 to 9.

1	Everett, Orange Hall	West Simcoe	January	31
2	Creemore, Leonard Hall	West Simcoe	February	1
3	Duntroon, S. O. S. Hall	West Simcoe	"	2
4	Singhampton, Grant's Hall	West Simcoe	"	3
5	Nottawa, Orange Hall	West Simcoe	"	4
6	Angus, Orange Hall	South Simcoe	"	6
7	Thornton, Orange Hall	South Simcoe	"	7
8	Adjala, Sloan's Hall	South Simcoe	"	8
9	Grand Valley	East Wellington	"	9
10	Arthur, Town Hall	East Wellington	"	10
11	Damascus, Township Hall	East Wellington	"	11
12	Kenilworth Township Hall	East Wellington	"	13
13	Mount Forest, Town Hall	East Wellington	"	14
14	Moorefield, Township Hall	West Wellington	"	15
15	Lebanon, School House	West Wellington	"	16
16	Rothsay, Temperance Hall	West Wellington	"	17
17	Alma, Town Hall	West Wellington	"	18
18	Glenwilliams	Halton	"	20
19	Ballinafad	Halton	"	21
20	Appleby, Town Hall	Halton	"	22
21	Nelson, Temperance Hall	Halton	"	23
22	Kilbride, Temperance Hall	Halton	"	24
23	Campbellville Temperance Hall	Halton	"	25
24	McCurdy's School House	Halton	"	27
25	Trafalgar, Township Hall	Halton	"	28
26	Elmbank, Temperance Hall	Peel	March	1
27	Cooksville, Township Hall	Peel	"	2
28	Brampton, Concert Hall	Peel	"	3 & 4
29	Tullamore, Town Hall	Peel	"	6
30	Bolton, Town Hall	Peel	"	7
31	Caledon East, Hanton Hall	Peel	"	8
32	Caledon, Township Hall	Peel	"	9

DIVISION 13: C. M. MacRae, B.S.A.; Alex. Yuill, Jan. 31 to Feb. 16 C. W. Nash, Feb. 17 to Mar. 2; Wm. Channon, Feb. 17 to 24; S. Rennie, Feb. 25 to Mar. 2; Mrs. Jean Joy, Feb. 9 to 11; Miss Lilian Gray, Feb. 25 to Mar. 2.

1	Altona, School House	North Ontario	January	31
2	Goodwood Town Hall	North Ontario	February	1
3	Zephyr, Music Hall	North Ontario	"	2
4	Udora, Orange Hall	North Ontario	"	3

DIVISION 13.—*Continued.*

5	Sunderland, Town Hall	North Ontario	February	
6	Cannington, Village Hall	North Ontario	"	6
7	Brechin, Village Hall	North Ontario	"	7
8	Uptergrove, Village Hall	North Ontario	"	8
9	Oakwood, Township Hall	West Victoria	"	9
10	Little Britain, Temperance Hall	West Victoria	"	10
11	Valentia, Foresters' Hall	West Victoria	"	11
12	Kinmount, Scott's Hall	East Victoria	"	13
13	Burnt River, Orange Hall	East Victoria	"	14
14	Dunsford, Oald Church	East Victoria	"	15
15	Omemee, Opera House	East Victoria	"	16
16	Manvers Station, Orange Hall	East Durham (aft.)	"	17
17	Bethany, Town Hall	East Durham (eve.)	"	17
18	Cavanville, Old Church	East Durham (aft.)	"	18
19	Millbrook, Town Hall	East Durham (eve.)	"	18
20	Garden Hill, Orange Hall	East Durham	"	20
21	Canton	East Durham	"	21
22	Kendal	West Durham (aft.)	"	22
23	Orono	West Durham (eve.)	"	22
24	Solina	West Durham	"	23
25	Nestleton	West Durham (aft.)	"	24
26	Blackstock	West Durham (eve.)	"	24
27	Columbus, Town Hall	South Ontario	"	25
28	Greenbank, Temperance Hall	South Ontario	"	27
29	Kinsale, Temperance Hall	South Ontario	"	28
30	Whitby, Council Chamber	South Ontario	March	1
31	Whitevale, Foresters' Hall	South Ontario	"	2

DIVISION 14: A. E. Sherrington; R. H. Field, Jan. 31 to Feb. 17; Mrs. Jean Joy, Feb. 4 to 7, and 18 to 27; Wm. Eager, Feb. 18 to 27.

1	4th Line, Orange Hall	West Peterborough	January	31
2	Ennismore, Township Hall	West Peterborough	February	1
3	Stewart's Union Hall	West Peterborough	"	2
4	Westwood, Town Hall	East Peterborough	"	3
5	Havelock Town Hall	East Peterborough	"	4
6	Warsaw, Town Hall	East Peterborough	"	6
7	Douro, St. Patrick's Hall	East Peterborough	"	7
8	Hillier, Town Hall	Prince Edward	"	8
9	Wellington, Town Hall	Prince Edward	"	9
10	Bloomfield, Town Hall	Prince Edward	"	10
11	West Lake School House	Prince Edward	"	11
12	Cressy, A. O. U. W. Hall	Prince Edward (aft.)	"	13
13	Waupoos, Town Hall	Prince Edward (eve.)	"	13
14	Milford, Town Hall	Prince Edward	"	14
15	Cherry Valley, Town Hall	Prince Edward	"	15
16	Demorestville, Town Hall	Prince Edward	"	16
17	Ameliasburg, Town Hall	Prince Edward	"	17
18	Wooler, Town Hall	East Northumberland	"	18
19	Brighton, Opera House	East Northumberland	"	20
20	Colborne, Temperance Hall	East Northumberland	"	21
21	Castleton, Town Hall	East Northumberland	"	22
22	Fenella Hall	West Northumberland	"	23
23	Baltimore, Chapman's Hall	West Northumberland	"	24
24	Bissell's School House	West Northumberuand	"	25
25	Cobourg	West Northumberland	"	27

DIVISION 15: H. Glendinning; Alex. Hume, Jan. 31 to Feb. 18; D. M. Wilson, Feb. 20 to 28; F. R. Mallory, Mar. 1 to 6.

1	Bath, Town Hall	Lennox	January	31
2	Odessa, Town Hall	Lennox	February	1
3	Sillsville, Town Hall	Lennox	"	2
4	Switzerville, School House	Lennox	"	3
5	Selby, Town Hall	Lennox	"	4
6	Enterprise, Merrill's Hall	Addington	"	6
7	Tamworth, Town Hall	Addington	"	7
8	Tweed, Town Hall	East Hastings	"	8
9	Queensboro, Orange Hall	North Hastings	"	9
10	Eldorado, Town Hall	North Hastings	"	10
11	Marmora, Town Hall	North Hastings	"	11
12	Springbrook, Foresters' Hall	North Hastings		
13	Moira, Town Hall	North Hastings	"	14
14	Turner's School House	West Hastings	"	15
15	Harder's School House	West Hastings	"	16
16	Gilbert's School House	West Hastings	"	17
17	Foxboro'	West Hastings	"	18
18	Plainfield C. O. O. F. Hall	East Hastings	"	20
19	Moult's School House	East Hastings (aft.)	"	21
20	Reed's School House	East Hastings (eve.)	"	21
21	Melrose, Town Hall	East Hastings	"	22
22	Spencer's School House	East Hastings	"	23
23	Harrowsmith, Town Hall	Frontenac	"	24
24	Sydenham, Town Hall	Frontenac	"	25
25	Sunbury, Town Hall	Frontenac	"	27
26	Wolfe Island	Frontenac	"	28

DIVISION 15.—*Continued.*

27	Gananoque, Town Hall	South Leeds	March	1
28	Lansdowne, Town Hall	South Leeds	"	2
29	Delta, Town Hall	South Leeds	"	3
30	Stella, Town Hall and Victoria Hall	Amherst Island	"	4
31	Emerald, Cheese Factory	Amherst Island	"	6

DIVISION 16: H. C. Emerson, Jan. 31 to Feb. 16; W. C. Shearer, Feb. 17 to Mar. 3; C. F. Alward, Havelock, N. B.

1	Mountain Grove, Town Hall	Central Frontenac	January	31
2	Sharbot Lake, Town Hall	Central Frontenac	February	1
2	Bradshaw's School House	Central Frontenac	"	2
4	Piccadilly, School House	Central Frontenac	"	3
5	Caintown, Presbyterian Church	Brockville	"	4
6	New Dublin, Town Hall	Brockville	"	6
7	Addison, Ashwood Hall	Brockville	"	7
8	Row's Corners, School House	Brockville (aft.)	"	8
9	Fairfield East, Foresters' Hall	Brockville (eve.)	"	8
10	Maitland, Workmen's Hall	South Grenville (aft.)	"	9
11	Algonquin, Temperance Hall	South Grenville (eve.)	"	9
12	Maynard, Meth. S. S.	South Grenville (aft.)	"	10
13	Domville, Epworth Room	South Grenville (eve.)	"	10
14	Roebuck, Orange Hall	South Grenville	"	11
15	Ventnor, School House	South Grenville	"	13
16	Shanley, School House	South Grenville	"	14
17	Mainsville, School House	South Grenville (aft.)	"	15
18	Cardinal, Town Hall	South Grenville (eve.)	"	15
19	Brinston's Corners	Dundas	"	16
20	North Williamsburg, Merkeley's Hall	Dundas	"	17
21	Aultsville, Fraternity Hall	Stormont	"	18
22	Moulinette, Christ Church	Cornwall	"	20
23	Cornwall Centre, Town Hall	Cornwall	"	21
24	Lancaster McCrae's Hall	Glengarry	"	22
25	North Lancaster, McDonald's Corners	Glengarry	"	23
26	Apple Hill, McIntyre's Hall	Glengarry	"	24
27	Greenfield	Glengarry	"	25
28	Martintown, St. Andrew's Hall	Glengarry	"	27
29	Monkland, McGillivray's Hall	Stormont	"	28
30	Avonmore, Beaver Hall	Stormont	March	1
31	Moose Creek, Gagnon's Hall	Stormont	"	2
32	Berwick, Town Hall	Stormont	"	3
33	Hawthorne, School House	Russell	"	4
34	Cumberland Maple Hall	Russell	"	6
35	Chute au Blondeau	Prescott	"	7
36	St. Anne de Prescott, Le Francois Hall	Prescott	"	8
37	Dalkeith, Public School	Glengarry	"	9

DIVISION 17: Wm. Elliott: W. C. Shearer, Jan. 31 to Feb. 15; A. W. Woodard, Feb. 16 to 28.

1	Toledo, Town Hall	North Leeds and Grenville (aft.)	January	31
2	Frankville, Montgomery's Hall	North Leeds and Grenville (eve.)	"	31
3	Easton's Corners, Methodist Church	North Leeds and Grenville	February	1
4	Bishop's Mills, Temperance Hall	North Leeds and Grenville	"	2
5	Heckston, School House	North Leeds and Grenville (aft.)	"	3
6	Miller's Corners, School House	North Leeds and Grenville (eve.)	"	3
7	Burritt's Rapids, Victoria Hall	North Leeds and Grenville	"	4
8	North Gower, Town Hall	Carleton	"	6
9	Manotick, Harmony Hall	Carleton	"	7
10	Merivale, School House	Carleton	"	8
11	Stittsville, Green's Hall	Carleton	"	9
12	South March, Town Hall	Carleton	"	10
13	Carp, Town Hall	Carleton	"	11
14	Stewartville, Town Hall	South Renfrew (aft.)	"	13
15	Burnstown, Temperance Hall	South Renfrew (eve.)	"	13
16	Admaston, Temperance Hall	South Renfrew (aft.)	"	14
17	Northcote, Temperance Hall	South Renfrew (eve.)	"	14
18	Grattan, School House	South Renfrew (aft.)	"	15
19	Eganville Hall	South Renfrew (eve.)	"	15
20	Cobden, Town Hall	North Renfrew	"	16
21	Beachburg, Town Hall	North Renfrew	"	17
22	Almonte, Town Hall	North Lanark	"	18
23	Pakenham Agricultural Hall	North Lanark	"	20
24	Carleton Place, Town Hall	North Lanark	"	21
25	Clayton, Foresters' Hall	North Lanark	"	22
26	Middleville, Town Hall	North Lanark	"	23
27	Watson's Corners	North Lanark (aft.)	"	24
28	Lanark, Town Hall	North Lanark (eve)	"	24
29	Balderson, McGregor's Hall	South Lanark	"	25
30	Innesville, Orange Hall	South Lanark	"	27
31	Lombardy, Town Hall	South Lanark	"	28

SPEAKERS AND SUBJECTS.

ANDERSON, DUNCAN C., Rugby.—Mr. Anderson was born in Scotland, and came to this country at an early age. He settled on a bush farm in Simcoe County, cleared the timber with his own hands, and now has a splendid 200-acre farm, which he still works. He is a successful breeder of shorthorn cattle and bacon hogs. Not only has he been a successful Institute worker for this province, but he has been invited by the local governments of New Brunswick, Nova Scotia, Manitoba and the North-West Territories and British Columbia, to visit their provinces, and has conducted Institute meetings in these places.

SUBJECTS:—"Cattle Raising," "Breeding Heavy Horses," "The Bacon Hog," Manure," "Crop Rotation," "Clover."

EVENING SUBJECTS:—"Farming as an Occupation," "Our Country."

ANNIS, L. E., Scarboro, has been president of the East York Farmers' Institute for some time, and in this capacity he and his secretary organized the Seed Fairs which are now becoming general as an adjunct in Farmers' Institute work throughout Western Ontario. He is a good farmer, has a pleasing manner, is easy of speech, and makes a good impression on his audience.

SUBJECTS:—"Production of Milk," "Pure and Impure Seeds, and Seeds of Weak Vitality," "Cultivation of the Soil," "Corn and the Silo," "Field Roots," "The Farmers' Honorable Calling," "Our Country."

BARBOUR, GAVIN, Crosshill.—Mr. Barbour was born some 35 years ago on the farm at present owned by him. He has followed mixed farming, but has at the same time made a specialty of feeding cattle for export, turning all the raw products of the farm into the finished article. All this time he has received good returns for his grain and has maintained an excellent state of fertility on his farm. While Mr. Barbour has not had experience in Institute work, as a speaker, he has information which will be useful to many farmers.

SUBJECTS:—"Selection, Breeding and Feeding of Beef Cattle," "Cultivation of the Soil," "Care of Manure."

EVENING SUBJECT:—"Farmers' Sons."

BECKETT, H. L., B. S. A., Hamilton. SUBJECTS: "Farmyard Manure; its Management, and Application," "Improving our Dairy Herds," "Feeding for Milk."

EVENING SUBJECT:—"Farming as an Occupation."

CAMPBELL, JOHN, Woodville.—"Manufacturing on the Farm," "How to Increase our Incomes," "Water System for Homes, Barns and Fields," "Growing Beef," "Growing Lambs," "Sheep Husbandry."

Evening Subjects:—"Life on the Farm," "The Building up of a Flock."

Carlaw, Geo., Warkworth, is a good practical farmer in Northumberland County. He attended the Ontario Agricultural College in his earlier years, and since then has been putting into practice on his farm the knowledge acquired in that institution. He is a practical dairyman, having served his time both in the home dairy and in the factory. Mr. Carlaw is also familiar with the practical work of the Farmers' Institute, having been secretary of his own for many years.

Subjects:—"How to Improve a Dairy Herd," "Grain Growing," "Care and Cultivation of Orchards," "Spraying for Insects and Fungous Diseases," "Butter Making on the Farm," "Cultivation of the Sugar Beet."

Evening Subject:—"Education of the Farmer."

Caston, G. C., Craighurst, is past president of the Ontario Fruit Growers' Association, and has charge of the Fruit Experiment Station in Simcoe County. Mr. Caston is one of our oldest Institute workers, and is well and favorably known in this capacity throughout the Province. In addition to the subject of fruit Mr. Caston is prepared to discuss the subject of cold storage and transportation; also the marketing of farm products. He has probably done as much as any other man to introduce hardy fruits suitable to our northern districts.

Subjects:—"Succulent Foods and Fodder Crops," "Soil Problems and Nitrogen Traps," "The Export Bacon Trade," "The Orchard Fruits of Ontario: their Care and Culture," "Picking, Packing and Shipping Fruit."

Evening Subjects:—'Cold Storage and Transportation," "The Land We Live In."

Channon, Wm., Oakwood:—"Cultivation of Corn and Roots," "Making Improvements on the Farm Each Year," "Farm Buildings, Fences and Drains."

Evening Subject: "Home Life on the Farm."

Clark, J. W., Cainsville, is a large feeder of poultry for the British market. He does not approve of fancy breeds of chickens for style only, but has for years been a strong advocate of utility breeds. He fattens his chickens in crates, and has been particularly successful in his experiments in the selection of the best type of birds for fattening. Mr. Clark is also a breeder of pure-bred hogs, and is prepared to discuss swine-breeding from its many standpoints.

Subjects: "Care and Selection of Seeds," "The Noxious Weeds on Our Farms," "Growing and Curing Alfalfa," "The Bacon Hog," "Manure: its care and application," "Improvement of our Public Roads." (See next page).

EVENING SUBJECTS:- "Poultry; the proper type of fowl," (Illustrated) "Poultry Buildings for the Farmer;" "The Incubator: Eggs in Winter." "Care of the Honey Bee."

COTTRELLE, G. R., Milton.—Mr. Cottrelle has been interested in Institute work for many years, commencing first in his local Institute, and there making for himself a reputation as a speaker on poultry subjects. He fattens poultry for the Toronto and Montreal markets, and by selecting only the best type of birds for fattening, he gets the very highest market price. Mr. Cottrelle was appointed by the Dominion Department of Agriculture as one of its Live Stock commissioners to the World's Fair, St. Louis.

SUBJECTS:—"Poultry; Eggs in Winter," "Preparation for Market," "Poultry Houses," "Hatching and Raising Chickens Naturally and Artificially."

DONALDSON, JOHN, Port Williams, N.S.—"Cost and Value of Manures and Fertilizers," "Care and Management of an Apple Orchard," "Marketing Apples," "Breeding and Management of Dairy Cattle."

EVENING SUBJECT:—"Agricultural Achievements and Possibilities."

DRUMMOND, D., 59 Waverley Street, Ottawa.—Mr. Drummond is a noted breeder of Ayrshire cattle, is a successful dairyman and a good farmer. He has, therefore, the requisites of a good Institute speaker. He also speaks French fluently, and so has been useful in certain sections of the Province where a number of the inhabitants do not speak English well. He uses charts to illustrate his talks on the dairy cow. Mr. Drummond's services have been in demand in other provinces, and he has spoken at Institute meetings and judged cattle at fall fairs from the Atlantic to the Pacific.

SUBJECTS:—"Selection and Breeding of Dairy Stock," Soil Moisture and Cultivation," "Care and Application of Manure," "Talks on Dairy Stable Construction and Ventilation," "The Importance of Selected Seed to the Farmer."

DRURY, E. C., Crown Hill, is an honor graduate of the O. A. C. Like his father, the Hon. Charles Drury, he is a practical farmer, and during the past season with one hired man and improved implements, worked successfully a mixed farm of 150 acres. He is a fluent speaker, and is well prepared to discuss the subjects given below.

SUBJECTS:—"Cultivation and Soil Moisture," "Rotation of Crops," "Manures and Manuring," "High vs. Low Farming," "The Boy on the Farm."

EVENING SUBJECTS: Any of the above, with the exception of "Manures."

EAGER, WM., Merrisburg.—"The Duties of Patron, Proprietor and Maker." "The Care of Milk on the Farm and in the Factory." "The Management and Care of Dairy Cattle." "The Advantages and Pleasures of Farm Life."

EATON, RALPH S., Kentville, N.S.—"Cost and Value of Manures and Fertilizers." "Care and Management of Orchards." "Marketing Apples."

EVENING SUBJECT:—"Education for the Farmer's Son."

ELLIOTT, ANDREW, Galt, was born on his father's farm near Galt. He has been a most successful breeder of dairy cattle and bacon hogs. Mr. Elliott is one of our oldest Institute workers, being enthusiastic, persevering, and extremely anxious for the success of every meeting he attends. His long experience as a successful farmer, and his ability to tell just what he has accomplished, has made him a valuable addition to our staff.

SUBJECTS:—"Moisture and Fertility in the Soil," "The Benefits of Clover," "Clover Hay," "Roots Necessary to the Successful Handling of Live Stock," "Corn and Silage," "The Profits of Sheep," "The Modern Hog," "Breeding, Feeding and Caring for the Dairy Cow," "Principles of Stock Breeding," "Pure Seeds," "Concrete."

EVENING SUBJECT: "Our Duty."

ELLIOTT, WILLIAM, Galt, is a son of Andrew Elliott, whose sketch appears above. He attended the O. A. C., Guelph, and since graduation has been putting his knowledge into practice on the farm. He has followed in his father's steps as a breeder of dairy cattle and bacon hogs, and has been a conspicuous prize winner at our large provincial fairs. He is thoroughly practical and up-to-date in his methods of farming.

SUBJECTS:—"Restoring and Maintaining Soil Fertility," "The Dairy Cow from Calf to Maturity," "The Growing and Feeding of the Bacon Hog," "Corn and the Silo."

EVENING SUBJECT: "How to Improve Present Farm Conditions."

Emerson, H. C., Corbyville.—"Judging and Breeding the Dairy Cow," "Selecting and Care of the Brood Sow and Young Pigs," "A Practical Talk on Corn."

Evening Subject:—"The Land we Live in."

Field, R. H., Addison, was for years secretary of his own Institute at Brockville. As dairying is the principal industry in Eastern Ontario, Mr. Field's services have been especially appreciated in that part of the country. He knows the dairy business thoroughly from the cow to the factory. He is a thorough believer in the silo, and was one of the first to introduce silage as a feed in Eastern Ontario. As a result of his work many silos have been built on the St. Lawrence and north into the Ottawa Valley.

Subjects:—"Plant Life," "Cultivation," "Bacon," "Requirements of a Dairy Cow; Her Care and Management," "Noxious Weeds."

Evening Subject:—"Farming."

Fraser, W. S., Bradford.—Mr. Fraser is one of the pioneer Institute workers of Ontario. In the early days when Institute work was in its infancy he attended the meetings as the "practical" man, on a deputation composed largely of college professors. He is a thoroughly practical farmer, and has lived on the same farm for 50 years. He is well acquainted with most of the farm problems, and, having been over the entire Province on Institute work, he has become a very valuable worker. During the past summer Mr. Fraser has been holding meetings in the Maritime Provinces with great success.

Subjects:—"Soil Tillage," "Clover; its Value to the Farmer," "Underdraining," "Noxious Weeds," (Illustrated) "Sheep; their Management and Care," "Bacon Hog; Economical Feeding," "Fodder Crops," "Tree Planting for Shade, Windbreak, etc."

Evening Subjects:—"Farm Life," "What Farmers Need."

Gardhouse, John, Highfield, is a well-known breeder of shorthorn cattle, heavy horses and long wool sheep. All of the prize lists of our large fairs testify to his ability to raise high-class stock. He raises most of the food for his pure-bred stock and is prepared to tell how he cultivates his land, plants his crops and mixes his foods so as to secure the best results from his live stock.

Subjects:—"Horse Breeding for Profit," "Care and Management of Horses," "How to Select and Feed Beef Cattle," "Care and Management of Sheep," "Raising Feed for Live Stock."

Evening Subjects:—"How to Improve Present Farm Conditions," "How to Interest Young People in the Farm."

GIBSON, D. Z., Willow Grove.—Mr. Gibson graduated from the Agricultural College in 1892, and since that time has been most successfully operating a large farm in Haldimand County. He has had considerable experience in Institute work, but during the past few years had dropped from the list of speakers. After a good deal of persuasion he has been induced to attend meetings this winter again. Mr. Gibson is a pleasing speaker, and a most valuable man to take part in discussions upon any line of general farming.

SUBJECTS:—"Erudiment and Cultivation of the Soil," "Vegetable Mould in the Soil," "Lucerne Growing and its Benefits," "Do Sheep pay in Ontario?" "Fall Wheat Culture."

EVENING SUBJECTS:—"The Farmer as a Citizen," "Cultivation of the Mind." "Is Co-operation Beneficial to the Farmer?"

GLENDINNING, HENRY, Manilla.—Besides breeding and feeding dairy cattle, Mr. Glendinning has made a reputation as a producer of field seeds. For years he has studied the weed question carefully, and by practically eradicating all weed seeds from his fields has been able to produce a quantity of seed almost free from impurities. With his seed charts and talks on cultivation of the soil and rotation of crops, he has helped many farmers in Ontario to improve their methods of farming and to increase their profits.

SUBJECTS:—"Feeds and Feeding," "Cultivation of the Soil, and Rotation of Crops," "Weeds and How to Destroy Them," "Clover the Farmer's Friend," "The Growing of Red and Alsike Clover for Seed," "The Dairy Cow," "Breeding and Feeding of the Bacon Hog," "The Farm Water Supply," "Spraying for Insects and Fungous Diseases."

EVENING SUBJECT:—"Beautifying the Home."

GROH, ANSON, Preston.—"The Farmer's Wood Lot," "Breeding, Feeding and Management of a Dairy Herd," "A Dairy Farm and a Farm Dairy," "Rearing and Feeding of Bacon Hogs," "Systematic Rotation of Crops," "Soil Moisture: its Importance and Conservation," "Doubling the Revenue of the Farm in Five Years," Clover and Lucerne."

EVENING SUBJECTS:—"The Stairway to Success," "The Farmer and the Sun," "Farming."

HALLMAN, A. C., Breslau, himself of German extraction, is located in a German settlement in the County of Waterloo. He is a well-known breeder and feeder of dairy cattle, and for years has been a prize winner for hogs at the Toronto Industrial Fair. He has also been a judge at many of our fairs, including Toronto Industrial, hence his talk on the improvement of live stock has been well received by the farmers.

SUBJECTS:—"How to Improve our Live Stock; their Care and Feeding," "The Bacon Hog and Export Trade," "Cultivation of Corn and the Silo," "Growing Sugar Beets for the Factory," "Home Dairying," "Noxious Weeds."

EVENING SUBJECTS:—"The Farmer's Fruit Garden," "Agricultural Development," "Up-to-date Methods in Agriculture."

HILBORN, J. L., Leamington. For a long time the name of Mr. Hilborn has been familiar as one of the leading fruit growers of Lambton County. He owns a splendid fruit farm on the north shore of Lake Erie, which bears every evidence of thrift and prosperity. His buildings are neatly painted and no weeds are allowed to grow to the detriment of the crop. A 6,000 gallon tank holds water which is used for irrigating, and which is conveyed through pipes and carefully distributed as required.

SUBJECTS:—"Planting and Care of an Apple Orchard," "Planting and Care of a Peach Orchard," "The Growing of Early Tomatoes and Melons for Market."

EVENING SUBJECT: "Improving Home Surroundings." "The Fruit and Vegetable Garden."

HUME, ALEX., Menie, is a noted Ayrshire breeder in the County of Northumberland. He is also a noted prize winner at our fall fairs, and as he is well prepared to discuss the dairy herd from all standpoints he should be a useful member of our Institute staff.

SUBJECTS:—"How to Prepare Cheap Feed for the Dairy Herd," "Selection and Care of the Dairy Herd," "Curing of Clover Hay," "Rotation of Crops and Application of Manure," "The Bacon Hog."

EVENING SUBJECTS:—"The Farm Labor Problem," "How to Keep the Boys and Girls on the Farm," "Leaks on the Farm."

HUTTON, G. H., B.S.A., Easton's Corners. Mr. Hutton is a graduate of the O. A. C., and besides general farming has made a specialty of raising hogs and chickens. He is thoroughly familiar with the use of the incubator and the rearing of fowl, and as this is one of the most important subjects before our poultrymen to-day his talks are particularly well received wherever he goes. Mr. Hutton belongs to the class of young men who believe in a liberal education for the farmer, and never loses an opportunity of advising farmers' boys to increase their theoretical and practical knowledge of farm work.

SUBJECTS: "Breeding and Feeding for Bacon," "Artificial Incubation," or Fitting Fowl for Fancy Prices," "Seeds and Seeding."

EVENING SUBJECT: "The Need of the Farmer of the Future."

James, D., Langstaff.—Mr. James took possession of the farm on which he now resides some 32 years ago, and has succeeded in converting it from a bed of weeds and rubbish into a clean, systematic and well-equipped farm. Mr. James is a believer in general farming, as will be seen from the list of subjects given herewith. Some 30 years ago Mr. James and his immediate neighbors formed an association and held weekly meetings throughout the winter. At that time he began the collection of an agricultural library, and to-day has one of the best equipped agricultural libraries to be found among practical farmers.

Subjects:—"Destruction of Weeds," "Home Dairying," "The Bacon Hog," "Rotations and General Cultivation."

Evening Subjects:—"Elements for Successful Farming," "Some Mistakes made by Farmers."

Jones, Harold, Maitland.—For a long time it was thought that the St. Lawrence Valley would never become a fruit-growing district. Mr. Jones, however, has demonstrated to the contrary. He is one of the men who has made the apple known as the "McIntosh Red" famous throughout the world. On his farm is located one of the Provincial Fruit Experiment Stations, and through this Mr. Jones has for years demonstrated to the farmers throughout the Valley the benefits to be derived from clean cultivation, proper fertilization and persistent spraying. For years past Mr. Jones has had large crops of potatoes, as a result of spraying, while his neighbors even on adjoining fields, have suffered sometimes to the extent of three-quarters of their crop from the prevalence of rot.

Subjects:—"How to Manage our Fruit Orchards; Planting, Cultivating, Fertilizing, Harvesting, Packing, etc.," "Life History of Some of our Troublesome Insects," "Spraying and Why We Do It," "Potato Culture, and Treatment for Blight and Rot."

Evening Subject:—"The Balance of Nature, Bird Life and the Insect World."

Kydd, W. F., Simcoe.—Mr. Kydd talks on horses, dairy cattle, and small fruits. He has had a large practical experience in all these departments, and being an aggressive, forceful speaker, his words carry weight. He has also had a wide experience in Fair matters, being the superintendent of the horse department of probably the largest agricultural show in the Province. He is also a judge of light horses, and as such has been invited to place awards in many parts of Ontario.

Subjects:—"Am I Raising the most Profitable Horse?" "The Dairy Cow; her Summer Feed and Winter Care," "Small Fruits and care of Grape Vines, Peach and Plum Trees."

Evening Subject:—"A Stitch in Time."

LEE, ERLAND, Stoney Creek. Mr. Lee has made his reputation as a practical dairy farmer. He is familiar with all kinds of farm work, as well as the manufacture of milk into butter. He practises soiling to a large extent with his cows, and has had good success in the feeding of cow peas green. He has also been secretary of South Wentworth Farmers' Institute for a number of years.

SUBJECTS:—"The Codling Moth and Apple Scab," "Conservation of Soil Moisture," "Breeding and Feeding the Dairy Herd," "Care of Milk for the Factory and Creamery," "Home Dairying," "Treatment of Milk Fever," "The Silo." EVENING SUBJECT:—"Improvement by Selection."

LICK, ELMER, Oshawa.—Mr. Lick makes a specialty of fruit culture. He has had charge of a large orchard on his own place for a number of years, and when the Fruit Marks Act was passed by the Dominion Government he was one of the first inspectors to be appointed by the Dominion Department of Agriculture. In this capacity he has had an opportunity of looking into all matters pertaining to the fruit industry, from the cultivation of the soil to the disposing of the products. He, therefore, speaks with authority, and can view the question both from the producers' and commercial standpoint.

SUBJECTS:—"Growing Apples," "Marketing Apples," "Cultivation of the Soil," "Cement Blocks in House Building," (Illustrated) "Corn Growing."

MCCRAE, Lt.-Col., Guelph.—"Beef," "Heavy Horses," "Sheep Raising," "General Cultivation," "Rotation of Crops," "Corn and the Silo," "Field Roots," "Forage Plants; with special reference to Grasses and Clovers."

MCDONALD, A. B., Appin.—"Beef," "General Cultivation," "Rotation of Crops," "Corn and the Silo," "Farmyard Manure," "Feeds and Feeding,"

EVENING SUBJECTS: "Farming as a Calling," "Ventilation and Water Supply."

MCMILLAN, R. J., Seaforth.—"Breeding and Feeding of Draft Horses," "The Beef Animal from Pail to Block," "Soil Cultivation and Crop Rotation."

EVENING SUBJECTS:—"Encouragement of Canadian Agriculture," "Education for the Boys who remain at home."

MCMILLAN, THOMAS, Seaforth. For many years Mr. McMillan has taken a deep interest in Institute work, having been president of his local Institute for some time. He is a practical farmer, and makes a specialty of beef cattle, and heavy horses. Some years ago Mr. McMillan addressed Institute meetings in Ontario, and proved a most acceptable delegate, and we are glad to again place his name on our list of speakers.

SUBJECTS:—"Breeding and Feeding of Draft Horses," "The Beef Animal,—From Pail to Block," "Soil Cultivation and Crop Rotation."

EVENING SUBJECTS:—"Encouragement of Canadian Agriculture," "The Journey of Life."

Mallory, F. R. Frankford.—"A Practical talk on the Dairy Herd," "Rearing the Dairy Calf," "Corn, Silo and Silage." "Farmyard Manure," "Clover; its value."

Evening Subjects:- "Some Improvements Farmers must have," "Education of the Farmer."

Mason, T. H., Straffordville.—When the Ontario Agricultural College at Guelph first opened its doors to farmers' sons, Mr. Mason was one of the first to enroll. He spent two years at the institution at that time, and has been able, as a result of his college work, to put into practice on his own farm so many modern ideas and methods, that his neighbors have found his farm and farm work a constant inspiration to them. Mr. Mason makes a specialty of dairying and hog raising.

Subjects:—"The Hog as a Money Maker," "Feed and Care of Dairy Cattle," "Sheep Raising," "Red Clover," "Corn for Grain and Silage."

Evening Subjects:—"Some National Problems," "Changing Conditions in Canadian Agriculture."

Miller, Robert, Stouffville.—Mr. Miller is one of the best known live stock men in Ontario, being a noted importer and breeder of Shorthorns and Shropshires. While Mr. Miller has paid particular attention to this line of the live stock industry, he is also prepared to discuss the horse question. He has been in demand as a judge at many Fall Fairs, and is also a director of the Toronto Industrial Exhibition.

Subjects:—"Breeding and Feeding of Cattle," "Sheep Raising," "Horse Breeding."

Nash, C. W., 94 Lee Avenue, Toronto.—Mr. Nash has an international reputation on the subjects that embrace natural history. He has long been an authority on birds, and has written bulletins both for the Department of Agriculture and for the Department of Education on this important subject. His talks also deal with plant and insect life, as well as the rearing and breeding of domestic animals. Probably there is no one on the staff can better interest the young people at Institute meetings than Mr. C. W. Nash.

Subjects:—"Chemistry of the Soil," "How Plants Grow," "Breeding of Domestic Animals," "The Value of our Birds," "Our Insect Pests," "Nature about the Farm," "The Enemies of the Pea Crop and How to Deal With Them."

Newman, Leonard H., Ottawa.—"The Production and Care of High-class Seed Corn, and a Practical Demonstration in Corn Judging," "Improvement of Farm Crops by Seed Selection, and the Part Played therein by Soil Conditions," "Some Recently Introduced Weeds: how they have been Introduced and Methods of Combating them."

Orr, J. E., Fruitland.—Mr. Orr lives on a 125-acre fruit farm, nearly every foot of which is devoted to fruit growing. Living as he does in one of the best sections of the Niagara District, and specializing as he does in the production of fruit, Mr. Orr has a technical knowledge of this subject possessed by few men of his age. From the cultivation of the soil to the marketing of the fruit he is familiar with every detail.

Subjects:—"Some Insect Enemies of the Orchardist." "Mistakes Made in Spraying." "Notes on Plums," "Controlling the Codling Moth," "The Black Knot and how we Exterminated it in our Township," "The Culture and Care of Fruit Trees," "Can we overcome 'Off Years' in our Orchards?" "How and When to Prune."

Pearce, John S., London.—

Subjects:—"The Selection and Care of Seeds," "School Grounds and Their Surroundings," "Planting of Trees for Timber," "The Education of the Farmer."

Peer, W. E. A., Burlington.

Subjects:—"Strawberry Culture," "Tomato Growing," "Plum Culture," "The Cherry," "A Young Man's Duty to Agriculture," "Ways and Means of Controlling Insect Life."

Race, T. H., Mitchell.—Mr. Race is one of the best known and most acceptable Institute workers in Ontario. He had his first experience in this line of work in company with Dr. Mills and the late John McMillan in the early history of the organization. Mr. Race spent his early life on the farm, but left it at the age of 26 to follow mercantile pursuits. After a business experience of six years, he entered journalism, which he has followed most successfully for a number of years. Mr. Race developed in early life a love for nature study—flowers and fruits—and has for many years been prominently identified with the Ontario Fruit Growers' Association. He was appointed Canadian Commissioner at the World's Fair, St. Louis.

Subjects:—"Planting and Care of Commercial Orchards," "The Farmer's Fruit and Vegetable Garden." Also five minute talks on the following subjects: "Pruning," "Grafting," "Roses," "Bedding Plants," "Care of Flowers," "Climbing Plants," "The Lawn," "Spraying," Soil Formation and Fertility."

RAYNOR, T. G., Rose Hall.—There will be few indeed of our readers who do not know Mr. Raynor. He has been in nearly every Institute district in Ontario, as well as in some States of the Union. He is a good speaker and is thoroughly familiar with his subjects, and carries with him charts, and models to illustrate his talks. He is a graduate of the O. A. C., has been president of the Experimental Union; was president of the old Central Farmers' Institute, and has been identified with nearly every progressive movement in connection with agriculture in Ontario during the past twenty years.

SUBJECTS:—"Feeds and Feeding," (Illustrated) "Forestry," "Grading up a Herd or Flock," "Corn and Clover," "Soil Cultivation," "The Production of Pork."

EVENING SUBJECTS:—"Agricultural Development," "Mistakes in Farming."

REED, DR. HENRY G., Georgetown.—Having had a good, practical farm training and a thorough course in veterinary science, Dr. Reed is able to deal not only with the problem of breeding and feeding live stock, but can also discuss the question of "Domestic Animals in Health and Disease." Being a good judge of horses he has during the past three years acted as judge at more than a score of our fall fairs with great satisfaction.

SUBJECTS:—"The Influence of Natural Laws in the Breeding of Live Stock," "Breeding Horses to meet the Present Market," "The Care and Feeding of Horses with the view to Preventing Disease," "Diseases of the Digestive System of Cattle," "Diseases Liable to Attack Newly-Calved Cows and Preventive Treatment," "Unsoundness in Horses, and the Best Means of Detecting It."

EVENING SUBJECTS:—"A Talk to Farmers' Sons," "Development and Training of Young Horses."

RENNIE, SIMPSON, 454½ Ontario Street, Toronto.—"Is the Sugar Beet a Profitable Crop for the Farmer to Grow?" "Root Culture and Rotation." "Destruction of Weeds." "Selecting Cattle for Beef Production."

REYNOLDS, A. J., Scarboro Junction.—Mr. Reynolds is the secretary of East York Institute. Besides the regular series of Institute meetings he and his fellow workers have held a series of special meetings, conducted entirely by local talent, and without any help from the Department. Out of these meetings has grown their annual Seed Fair, of which Mr. Reynolds is also secretary. Unfortunately Mr. Reynolds cannot conveniently leave home for a long trip, but we are glad to be able to place his name on our reserve list.

SUBJECTS:—"The Dairy Cow; Her Care and Feed," "Corn and the Silo," "Clover Growing," "Objects and Methods of Cultivation," "Seed Fairs," "Sugar Beets."

SHEARER, CHARLES E., Vittoria.—Before entering Institute work Mr. Shearer made an enviable reputation for himself as secretary of South Norfolk Farmers' Institute, and a good organizer, with a practical knowledge of farm work almost invariably makes a good delegate. He will be especially useful to the Institute secretaries in the divisions he may visit, as he is thoroughly familiar with the rules and regulations governing Institutes. His specialty at home is dairying and the production of grain for the silo.

SUBJECTS: "Breeding and Feeding the Dairy Cow," "The Cream Separator and Home Butter Making," "Corn and Silage," "Clover."

EVENING SUBJECTS: "The Farm as a Home," "Past, Present and Future."

SHEARER, W. C. Bright.—Dairying is the particular department of farming in which Mr. Shearer has been eminently successful. He is thoroughly practical: a good speaker: and an Institute man of experience for some years past, and will doubtless be a most acceptable delegate. As will be seen from his subjects, Mr. Shearer is also prepared to discuss the bacon, seed grain and corn questions.

SUBJECTS:—"Selecting and Breeding a Profitable Dairy Cow," "The Bacon Hog," "Rotation of Crops and Selection of Seed Grain," "Growing Corn for Silage," "Mangels and Turnips," "Erecting Home-made Lightning Rods."

EVENING SUBJECTS: "Pure-Bred Poultry for Boys and Girls," "Farming as a Profession."

Sheppard, Fred. A., Queenston, is a large fruit farmer in the celebrated Queenston district. He has made a specialty of packing fruit in fancy boxes for the best trade. He has also been particularly successful in grafting and budding, and gives illustrations of both these methods of propagation at the meetings. He is also a producer of tomatoes, and talks tomato culture from the cold frame to the market.

Subjects:—"Propagation of Fruit Trees and Vines, and the Care of Orchards and Vineyards," "Clover, Corn and Roots," "The Importance of Soil Moisture," "Small Fruits for Home and Market,—Varieties and Cultivation," "Insects and Fungi Injurious to our Fruit Crops."

Evening Subject: "How Can we Make Farm Life More Attractive?"

Sheppard, Major James, Queenston, as the title would imply, has had a military record. As a defender of the country in 1866, he has a fund of historical knowledge that different Institutes have found useful for their evening meetings. His talk on "Three Historical Days on the Niagara River," has been as favorably commented on as any that have been delivered. His practical subjects deal with orchard management and good roads. With the latter movement he has been identified for many years. In 1902 he had charge of the Good Roads movement in Eastern Ontario, and built roads in several counties as a guide to the municipal council for future work in road making.

Subjects: "Macadam Roads: Their Cost and Construction," "Care and Improvement of Common Country Roads," "Planting and Care of Orchards," "Propagating Fruit, Grafting, Budding, etc.," "Tomatoes for Home and Market," "Soil Tillage for Fertilizing and Moisture."

Evening Subjects: "Transportation as it Affects the Farmers," "Three Historic Days on the Niagara River," "Opportunities on Canadian Farms."

SHERRINGTON, A. E., Walkerton, has had charge of the Provincial Fruit Experiment Station for that district. He is well up in matters pertaining to fruit culture. He is known in the Lake Huron district as a "Co-operative" farmer, for he believes that "in union is strength." He is the manager of his local co-operative society and handles most of the fruit shipped out of the town of Walkerton.

SUBJECTS:—"How to Make an Orchard Profitable," "Planting, Pruning and Grafting," "Spraying as a Preventive of Insects and Fungous Diseases," "Co-operative Packing and Shipping of Apples," "Conservation of Soil Moisture," "Small Fruits for the Farmer's Garden." "The Selection of Seed Grain."

EVENING SUBJECTS:—"Small Fruit Culture," "Breeding, Feeding and Marketing Poultry," "Beautifying the Farm Home."

STEPHEN, W. F., Trout River, Que.

SUBJECTS:—"Soil and Tillage," "Corn and the Silo," "The Dairy Cow: How to Rear and Feed Her," "Good Roads and How to Make Them," "Keeping Farm Accounts and Records," "Stable Manure and Fertilizers."

EVENING SUBJECTS:—"How to Interest the Boys and Girls in Farming," "Making the Most of Farm Life."

STEVENSON, R. S., Ancaster, is one of the oldest Institute workers in Ontario. Being a practical dairyman and breeder of dairy cattle, he has been identified with advanced dairy work in Ontario for a long time. During the past two years he has acted as expert judge at many of our exhibitions and has given excellent satisfaction. No matter where he goes Mr. Stevenson is always welcome and is recognized as a man who thoroughly understands the work he undertakes to discuss.

SUBJECTS: "A Practical Talk on Dairy Cows, Breeding, Feeding, Selecting, etc.," "Growing the Corn Crop and Handling it to the Best Advantage," "The Growing of Root Crops," "The Cream Separator on the Farm," "The Farm Water Supply."

THOMPSON, ROBERT, St. Catharines, is a practical fruit grower, and has also had a wide experience in the handling and shipping of fruit. He is also interested in the subject of cold storage, and has practically demonstrated the need for such an institution in a large fruit business. Mr. Thompson is also a practical farmer, and in addition to his orchard work raises large quantities of poultry and hogs.

SUBJECTS:—"Poultry Raising," "Incubators and Poultry Houses," "Swine Breeding and Feeding," "Corn Growing," "Small Fruit and Fruit Trees," "Gathering and Marketing of Fruit," "Cold Storage," "Underdraining," "Cultivation of the Soil," "Good Seed an Important Factor in Profitable Farming."

EVENING SUBJECTS:—"The Farmer of the Future and His Prospects," "Poultry Raising for Boys and Girls," "Hints on Canning Fruits and Vegetables."

WAGG, A. J., Mindemoya.—Mr. Wagg is a graduate of the O. A. C., Guelph, and a specialist in dairying. After graduation he moved to New Ontario and has been doing pioneer work in dairying for some years past. He has had charge of a large creamery in Mindemoya, on Manitoulin Island, and it was because of his success in this work that he was chosen to the larger field of Institute work. Last winter Mr. Wagg addressed Institute meetings throughout one of the divisions with great acceptance to the people.

SUBJECTS:—"Selection and Management of Dairy Cattle,—Calf, Heifer, Cow," "Soil Fertility in Relation to Dairy Farming," "Milk,—Secretion, Composition, Management and Food Value."

EVENING SUBJECTS:—"Methods of Creaming Milk and Home Butter Making," "Agricultural Education," "Conditions in New Ontario for the New Settler."

WARREN, J. L., Acton.

SUBJECTS:—"Clover as a Feed and Fertilizer," "Corn and the Silo," "The Institute as an Educator for Farmers' Sons and Daughters," "How to Make the Institute Successful."

Wilson, D. M., Kemptville.—Mr. Wilson is a graduate of the Guelph Dairy School, and also of the Kingston Dairy School. He spent his early years on his father's farm in Leeds County, but since 1889 has given his time and attention to the cheese industry. Mr. Wilson spent one season as Assistant Instructor in the Cheese Department at the Kingston Dairy School, and for the past two seasons has been Dairy Instructor for the Kemptville Syndicate. No doubt Mr. Wilson will be able to give some helpful suggestions to the dairy farmers in the districts he will visit.

Subjects:—"Common Taints Found in Milk, and Their Action in Cheese and Butter-Making," "The Patron's Relation to the Factory," "Unnecessary Loss in Cheese-Making," "Points to Be Looked For In a Dairy Cow," "Silos and Silage," "Co-operation in Dairying."

Woodard, A. W., Montreal.—

Subjects:—"Cheese-making; Duties of Producers, Makers, and Proprietors," "Dairying; Mistakes of the Past Season and Suggestions for the Coming One," "Butter-making; Manufacturing and Marketing."

Yuill, Alex., Carleton Place.—"Breeding, Care and Management of a Dairy Herd," "Corn and the Silo," "How to Restore an Impoverished Farm," "Care of Farm Horses."

Evening Subjects:—"How Shall we Utilize our Winter Evenings?" "Farming as an Occupation."

LADY SPEAKERS.

Bell, Miss Mary, St. George.—North Brant Women's Institute is fortunate in having among its members such a capable and willing worker as Miss Mary Bell. She has shown a great interest in the work of her local Institute, and it was through her cooking demonstrations at local Institute meetings that Miss Bell's ability was brought to the attention of the Department. She is a graduate of Oread College, having taken a thorough and practical course in domestic science. During May and June of the present year Miss Bell proved a most acceptable delegate at summer meetings of Women's Institutes in the eastern part of the province.

Subjects: "Soups," "Eggs, Methods of Preparation," "Salads," "Cool Dishes for Summer Use," "Ventilation and Sanitation," "Refining Home Influences."

Campbell, Mrs. Colin, Goderich.—Mrs. Campbell is secretary of the West Huron Women's Institute, and under her guidance it has become one of the strongest institutes in the province. She has also been an acceptable speaker at Farmers' Institute meetings, and a glance at her list of subjects will show that she is prepared to speak on many helpful phases of women's work.

Subjects:—"The Scientific Cook," "Women's Institutes and How to Make the Meetings Interesting," "The Kitchen Garden; Does it Pay?" "The Housekeeper and Her Importance to the State," "Practical Housekeeping."

Carter, Miss Gertrude, Guelph.—Miss Carter is a graduate of the Guelph Dairy School, and since her graduation has spent two years in her father's creamery at Aberfoyle. She is, therefore, prepared to speak on all questions pertaining to the handling of milk and the manufacture of butter. She is also a public speaker of ability. Besides the subject of dairying, Miss Carter is prepared to discuss the sewing question, which is one of great importance.

Subjects:—"The Art of Sewing in the Home," "Care of Milk and Cream," "The Sunny Side of Dairying," "Pleasures and Profits of a Dairy School Training," "Courtesy in the Home," "The Modern Woman on the Farm."

Dunbrack, Mrs. A. E., St. John, N. B. Many officers and members of Women's Institutes prefer to have as a delegate a woman of practical experience in housekeeping, rather than a young girl, no matter how thorough a college course the latter may have had. Mrs. Dunbrack has the advantage of college work, as well as ten years' experience in housekeeping. She is, therefore, prepared to speak from actual knowledge on the subjects for which she is advertised. During the summer meetings of Women's Institutes, Mrs. Dunbrack proved an interesting and helpful delegate.

Subjects:—"Hints on the Hygiene of Infants and Young Children," "Systematic Housewifery," "Annual House-cleaning," "The Table," "Poultry Raising."

DUNCAN, MISS BERTHA, Emery.—Miss Duncan is a graduate of the Hamilton School of Domestic Science, and has been out on one series of Women's Institutes meetings. She was brought up on a farm, and is familiar with conditions of rural life, as well as being a practical housekeeper.

SUBJECTS:—"Economy in Small Things," (with demonstrations) "Use of Food to the Body," "Selection and Care of Vegetables," "Eggs," "Care of the Kitchen."

GRAY, MISS GERTRUDE, 650 Bathurst Street, Toronto.—Last summer, during the special series of Women's Institute meetings, Miss Gertrude Gray took her first trip on Institute work, and was well received in the different districts visited. She took a course in domestic science in Toronto, and at her own home puts into practice the knowledge gained while taking her college course.

SUBJECTS:—Cooking demonstrations in the following: "Meats and Fish," "Salads," "Puddings," "Eggs and Egg Dishes," "Cream Soups," "Tea Dishes."

Talks on the following subjects:—"Domestic Science and Women's Institutes," "Suggestions for Home Makers," "Food: We are What we Eat."

GRAY, MISS LILIAN D., 650 Bathurst Street, Toronto.—Miss Gray is a graduate of the School of Domestic Science at Toronto. Besides her regular talks on the home and homemaking, she is prepared to give practical demonstrations on the preparation of foods for the table. She also advocates a liberal diet of fruit, and her talks on "The Value of Fruit in our Diet," has been well received in the Institutes she has visited.

SUBJECTS:—"The Value of Fruits in our Diet," "Domestic Science on the Farm," "Why Should we Use a Mixed Diet?" "Nutritive Value of Foods in Health and Disease," "Making Home Attractive."

Hills, Miss Jessie, 11 Spencer Avenue, Toronto.—Miss Hills is a graduate of the Toronto Technical School. Her experience in Institute work extends through the summers of 1903 and 1904, when she visited a number of the Women's Institutes during the regular summer series of meetings. As well as taking part in Institute work, Miss Hills has given a number of demonstrations at fall fairs, and her talk on "Meats and Methods of Cooking," was most acceptable and suggestive.

Subjects:—"Talks on Food," (with demonstrations) "Invalid Cookery," "Misconception of Domestic Science," "Aims and Objects of Women's Institutes," "Practical Hygiene."

Joy, Mrs. Jean, 317 Brunswick Avenue, Toronto.—Several years previous to the introduction of Domestic Science in the schools of Toronto, Mrs. Joy addressed gatherings of ladies in various parts of the Province upon the subject, and it was through her instrumentality that a petition was presented to the Board of the Technical School of Toronto, requesting that Domestic Science be placed upon the regular course of studies. The petition presented was one of the most representative that had ever come before the Board, and they decided to include Domestic Science in the curriculum. The classes from the first were well attended, and were most successful under the guidance of Mrs. Joy, She has ever since kept in close touch with work of this nature, and the Department has been most fortunate in securing her services to address Women's Institutes throughout Ontario.

Subjects:—"Food and Its Relation to the Body," "Digestion,—Food in Health and Disease," "Infant and Child Feeding," "Water, Milk,—Beverages," "Meats," "Vegetables," "Ventilation and Sanitation."

McTavish, Mrs. D., North Bruce.—Mrs. McTavish might be called one of the pioneers of West Bruce. As soon as Women's Institutes were mentioned she was one of the first to see the possibilities of such an organization for women on the farm. Since then she has been indefatigable in her efforts on behalf of the farmers' wives and daughters of her own district. She has also found time to help in provincial work, and none of our speakers have been more acceptable to the Women's Institutes of Ontario than Mrs. McTavish.

Subjects:—"Bread Making," "Home Dairying," "The Benefits of Women's Institutes," "Kindness and Economy in the Home," "Home Economics," "The Education of our Daughters."

RIFE, MISS ISABEL, Hespeler.—"Last summer Miss Rife proved one of the most acceptable delegates to Women's Institutes, although it was her first experience in work of this kind. Previous to going out Miss Rife took a course in the Macdonald Institute at Guelph, and before that was a successful public school teacher. As well as being a capable and pleasing speaker, Miss Rife created a most favorable impression in many places by her gift of song.

SUBJECTS:—"Benefits and Pleasures of a Macdonald Institute Training," "Mutual Helpfulness in Women's Institutes," "Sunshine, Pure Air and the Bath as Aids to Health?" "Prevention and Home Treatment of Consumption," "Hygienic Influence of Laughter and Song," "Gymnastics in the Home."

ROSE, MISS LAURA, Guelph.—Miss Rose is well and favorably known to most agricultural audiences in the Province of Ontario. She has charge of the Home Dairy Department at Guelph College, and has in the Guelph Dairy instructed thousands of farmers' daughters in the art of butter making. In the November-December series each year Miss Rose lends her services to Institute work, and occasionally during the winter, as she can be excused from her college work. For the past two years Miss Rose has taken charge of the Travelling Dairy in Nova Scotia, with marked success.

SUBJECTS:—"The Production and Care of Milk," "Butter-Making on the Farm," "Defects in Butter,—Their Cause and Remedy," "Bread and Buns," "How Much Are we Worth?" "One Eye in the Field and the Other in the Town," "A Rolling Stone Gathers no Moss."

KINNEY, MRS. ANDREW, Grandview.—Mrs. Kinney is one of the most successful butter makers in Brant County. For a number of years she commanded the highest price for dairy butter on the Brantford market, and it was from the reputation made in this way that she became known to the Superintendent of Farmers' Institutes, and was induced to take a position on our staff. She also makes a specialty of plain sewing, and her talks on "Fabrics" will no doubt be helpful and interesting to many women. Mrs. Kinney carries with her samples of flour and tells how to judge it.

SUBJECTS:—"Home-made Bread and the Flour we Use," "One Week With the Farmer's Wife Making Butter," "The Women's Institute as a School of Domestic Science," "The Fabrics we Buy and How to Make Them Up," "Evenings at the Homestead," "The Modern Home."

MADDOCK, MISS BLANCHE, Guelph.—Miss Maddock started in Farmers' Institute work before Women's Institutes were organized, so that she is thoroughly familiar with all branches of the work. Being a graduate of the Guelph Dairy School, and a student of bacteriology, she has a fund of useful information and is always welcomed by her audiences. She has probably organized more Women's Institutes in Ontario than any other one person and has shown herself an expert in getting into the hearts of the people, and getting them to work. Wherever Miss Maddock has gone there have been requests that she should return to the same district.

SUBJECTS:—"Science of Butter Making," "Bread Making," "Our Women's Institutes and How to Make Them Interesting," "Bacteria; Their Relation to Health and Diseases," "Domestic Science," "Cultivation of Flowers," "A Girl's Possibilities."

MILLAR, MISS BELLA, Guelph.—Miss Millar was for two years instructor in the Home Dairy Department of the Strathroy Dairy School. There she had an opportunity of helping the farmers' daughters to become familiar with the proper care and handling of milk and its manufacture into butter. During the last three years Miss Millar has turned her attention to Institute work, and having had a training in hospital nursing as well as in dairying, she is well up on two subjects which are always interesting to an Institute audience.

SUBJECTS:—"Butter Making," "The Farm End of the Dairy Business," "Hints For the Home Nurse," "Women's Institutes," "Domestic Education."

SHUTTLEWORTH, MISS L., Guelph.—Miss Shuttleworth was born and brought up on a farm, and is familiar with the conditions surrounding Ontario farm life. Since graduation from Guelph Dairy School several years ago, she has had extended experience in dairying and other lines which fit her particularly well to address Farmers' and Women's Institute meetings. Miss Shuttleworth proved an acceptable delegate to Women's Institute meetings last season.

SUBJECTS:—Butter-making on the Farm," "The Care of Milk for City Trade," "Cold Dishes for Summer Use," "Home and Home Making," "Evenings at the Homestead."

Smith, Miss Agnes, Hamilton.—Miss Smith is a graduate of the Ontario Normal School of Domestic Science, Hamilton. She has been connected with Women's Institute work almost since its organization, and her practical demonstrations have helped thousands of women in Ontario on their farms. For the past two years she has taken charge of the demonstration work at the College at the time of the Farmers Institute excursions to Guelph. She is also a graduate of the Dairy School at Guelph.

Subjects: "Principles of Cooking," (with demonstrations), "Meats: Composition and Cooking," "Food in its Relation to the Body," "Domestic Science," "The Sanitary Home," "The Needs of the Home of the Present Day," "Labor Problems of the Household."

FARMERS' INSTITUTES OF ONTARIO.

Extracts from Rules and Regulations.

Below are given a few extracts from the Rules and Regulations Governing Farmers' Institutes. Only those portions which are of special interest to officers and delegates have been selected. A complete edition of "Act, Rules and Regulations Relating to Farmers' Institutes of Ontario" may be had upon application to the Superintendent, Parliament Buildings, Toronto.

Object of Local Institutes.

The object of each local institute shall be the dissemination of agricultural knowledge in its District and the development of local talent. The officers shall endeavor to bring the rank and file of the farmers into touch with the most successful local men, that the masses may become more conversant with the best and most profitable methods of farming, stock raising, dairying, fruit culture, and all branches of business connected with the industry of agriculture.

Selection of Officers.

One of the most important duties devolving upon the members of the institute is the selection of officers at the annual meeting, to be held between the 1st and 20th of June in each year. In order that the best interests of the organization may be served, it is well to elect for each township representative men who will take an active interest in the work. It would be well for the officers and directors to give the matter due consideration: look carefully over the field, and select the best men representing the various districts.

Each year a meeting of the directors shall be called by the secretary to meet some time before the 1st of March. The special business of this meeting shall be to arrange for holding the annual meeting.

Each municipality in the district shall be divided annually between the directors representing the same, whose duty it shall be to make a thorough canvass for membership each year. This division of territory shall be arranged at a directors' meeting held immediately after the close of the annual meeting.

As soon as it is decided to hold an institute meeting in a municipality, the directors elected to represent that municipality shall form part of the executive committee, until after the close of said meeting. The duties of the said directors shall be to assist (to the best of their ability) the other members of the executive, to the end that a successful meeting may be held in their municipality.

It shall be the duty of the officers and directors to be present at the meetings of the institute. An officer or director who has not during the current year attended the meeting held in his municipality (except when prevented by sickness), or otherwise rendered valuable assistance to the institute, shall not be eligible for re-election to office for the ensuing year.

Every officer and director shall promptly answer all official communications addressed to him by the Superintendent, and should make diligent efforts to furnish any information required of him relative to the affairs of the institute.

Special Instructions and Explanations.

The Farmers' Institute system is non-political in the strictest sense. (See Clauses 31 and 32 of the Act and Rules governing Farmers' Institutes). Persons sent as delegates, and officers and directors of institutes, are instructed to enforce these rules to the very letter. Delegates are expected not to discuss, either directly or indirectly, political or sectarian questions while engaged as delegates, either before, after, or during the meetings. It is not necessary for them when acting as delegates even to make public their political allegiance.

The greatest care is exercised in choosing speakers. The services of specialists are obtained as far as possible—persons who have been successful in special lines, or those who are well qualified to explain profitable methods not generally followed. No attention is paid to politics, religion, or nationality when choosing delegates; they are chosen because of their qualifications only.

In some cases the delegates may not be prepared to discuss the subjects the local officers deem of greatest interest. In such cases the officers should employ additional persons to deliver addresses of the character desired. A list of these additional speakers, together with subjects, may be secured by applying to the Superintendent.

If, from sickness or any other cause, a delegate who is advertised cannot fulfil his engagements, another person competent to discuss similar subjects will be sent in his place. But every precaution will be taken to prevent the necessity of changes. When changes are necessary substitutes will be chosen from among the list of available delegates.

The Department defrays the cost of sending regular delegates to regular meetings; but officers, directors, and members of institutes are expected to lighten, as far as possible, the expenses of the delegates by meeting them at the railway station and conveying them free of expense, to the place of meeting, or returning them again to the station or forwarding to the next place of meeting.

Delegates and officers are urged to do all they can, by the use of the *Question Drawer* and otherwise, to draw out in discussion as many as possible of those present. Call upon them personally and urge them to speak. Frequently those best qualified are least inclined to take part. Try in each case to make the discussion interesting by engaging some experienced man to follow each address and thus open the discussion. Do not allow one or two to monopolize the discussion, but make all feel that they have a part in the proceedings.

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ANNUAL REPORT

OF

Ontario

Fairs and Exhibitions

For the Year

1904

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

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1904.

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CANADIAN ASSOCIATION

OF

FAIRS AND EXHIBITIONS.

ANNUAL MEETING.

The annual meeting of the Association was held in the City Hall, Toronto, on Wednesday and Thursday, February 17th and 18th, 1904. The proceedings began at 2 p.m. on Wednesday, the President, Mr. J. T. Murphy, occupying the Chair.

ADDRESS OF WELCOME BY MAYOR URQUHART.

I had the privilege last year of extending to you the welcome of the city, and I am particularly pleased to be able to welcome you again this year. I stated at that time that, when you came again I hoped you would have a better place to meet in. I am pleased that I have been able to carry out my promise, and have secured for you this room in the City Hall, in which the Industrial Association meets.

I am convinced that our fairs have had a great deal to do with the progress the Province has made along agricultural lines. They are an excellent institution, bringing, as they do, our agriculturists together in friendly rivalry, and also in a social way. The fact that the dwellers of the country can meet together there and touch hands and touch hearts, is exceedingly good from a social point of view.

I had the privilege last year of visiting two of our County Fairs, North York at Newmarket, and West Elgin at Wallacetown. Incidentally, I may say that one of the first offices I ever held was that of Secretary of the West Elgin Agricultural Society. I was very gratified to see the progress that had been made, and, generally speaking, the manner in which these fairs were being conducted. The point that struck me particularly in connection with the West Elgin Fair was the new system of judging, expert judges being employed, who were sent out by the Ontario Department of Agriculture. I remember that in the old days there was considerable heart-burning over the decisions when the local men did the work, and I consider that this new feature is an exceedingly good one.

Another admirable feature was the fact that these judges gave the reasons for their decisions, explaining why they gave the prize to one animal instead of another. That struck me as an exceedingly good educative feature.

I think it would be a very desirable thing if all the fairs in the Province could be represented at a gathering of this kind—perhaps they are—because I realize how much information we can gain one from another at these conventions.

I sincerely trust that your visit to our city will be a pleasant one, that your discussions will be full of interest, and that you will carry away from this meeting ideas that will be of advantage and profit to the various fairs you represent, and not only to their advantage, but to the advantage of the whole agricultural community.

PRESIDENT'S ADDRESS.

By J. T. Murphy, Simcoe.

In coming together again at this our annual meeting, it is certainly a cause for congratulation to find the deep interest evinced by the various Societies of the Province, and to have with us such a large number of representatives, as it undoubtedly augurs well for the future. No doubt there are some here who belonged to the Association at its organization, and who remember well how we labored along for many years merely existing, as it were, but well knowing that there was much needed work to be done ; but so very many of the Societies stood aloof that at various times we were very much discouraged and about to give up. Yet we kept plodding along, and at last we gained the attention and help of the Department, and by the very generous and kindly aid extended to our Association, we are cognizant of the fact that great good is being accomplished. Our fairs are becoming more uniform, and are governed very largely by the same rules and regulation ; new features are being introduced, and the people are being educated up to the fact that a higher ideal in our work must be attained. All praise, therefore, is certainly due to those who so persistently adhered to the good work.

The system of expert judges is being more extensively employed each year, and from what our Superintendent reports, it is getting a somewhat difficult matter to engage the number required. I trust the good work may still go on, as I am convinced that most of the great improvement in our fairs is due to the said system.

School Children's Day is, I venture to predict, sure to become one of the most prominent features of the successful fair. I found with us that for two years we could not induce any of the schools to take any part in our programme ; yet we did not falter but enlarged the number of prizes in the way of displays, drilling and marching, for rural schools and also for those in towns and villages, club swinging, wrist exercises, etc., as well as sports and games for the school children, and I am pleased to state that last year we had several schools enter the list and a large number of school children contesting in the games, etc. We also had some horseback sports for the afternoon, such as novelty races, potato races and skirt and bonnet races, and these with the schools made a very enjoyable time, so much so that we had on the second day a much larger attendance than for years. It is our purpose to still further add to this part of our programme for this year, as we feel assured it will add greatly to the interest in our fair.

Nature Study should be in every way encouraged by each and every Society as one of its educational features, and thus draw the attention of the boys and girls more directly to the desired object.

Another very instructive competition is that of correctly naming the different varieties of apples and quality of same open to children from ten to sixteen years of age. The deep interest taken by the large number of children competing shows conclusively that it must prove a great educative work.

Having experimental plots on our grounds the past year, Prof. Zavitz was present and gave addresses to large audiences at stated intervals, regarding the different grains, grasses, roots, cover crops, etc. One great object lesson demonstrated was that mustard, which had been sown with the grain, could be killed by spraying without injuring the grain. Many considered this one of the most interesting and educative features of the fair.

As we now have Women's Institutes in nearly every district, I would strongly recommend the having of a Women's Building or tent for domestic science, and as the Women's Institutes will be only too pleased to co-operate with the Agricultural Societies in making a special feature of women's work, success is sure, as very useful and instructive work is demonstrated and deep interest taken therein.

Discussion still goes at our meetings regarding the management of our fairs, and I am pleased to see that through it all the best of feeling prevails, the general thought

being to do only what is for the benefiting and elevating of our Societies. I notice, however, in most of the newspaper reports all over the country that the fairs doing the most are those working along educational lines, rather than those paying out large amounts for various attractions. Many of the fairs are starting out on new lines, and we can only wait and see what the general results may be, and whatever is said and done must be, as formerly, in the most kindly and considerate manner, and we can rest assured that eventually that which is for the best will no doubt prevail.

The question of a uniform set of books which would generally be acceptable to the majority of the fairs has come before us at various sessions, and at present it is a very important matter. It is felt that something should be done with it, and I trust that it may receive due consideration at this time, either by the appointing of a special committee from this Association, or by the Superintendent, with the assistance of the Department and this Association.

I have felt for some time that we have been going on with our business in rather an unsatisfactory manner, having no fixed special order of our own, or any regular order of business, so at the meeting of the Executive I referred to the matter and submitted a draft for their consideration. After discussion it was carried that the following be adopted as the regular order of business for our sessions :

First day—Reading minutes of previous meetings ; Report of Standing Committees ; Report of Select Committees ; Reading of Communications.

Second day, afternoon—Unfinished business ; New business ; Treasurer's Statement ; Nomination and election of Officers. This, therefore, will be followed out as closely as possible at stated intervals, the addresses and discussions as given in the programme being interspersed between same.

We are also brought face to face with a matter of the deepest interest to us as an Association. I refer to the case of our Superintendent. As you are all no doubt aware, Mr. Creelman has been appointed President of the Ontario Agricultural College at Guelph, thus necessitating his giving up the position of Superintendent of Fairs ; and although we rejoice with him in having received such excellent promotion, we still regret his departure from among us. I think we can truthfully say that he has conserved our interest to the fullest extent ; and endeavored at all times to advance them. Always courteous and obliging in all his dealings with the various Societies, we can only hope and trust that in his new position he may be in every way successful, feeling assured that the usual tact and energy evinced in our work will be still further manifested as President of the College, an institution which we are proud to know stands to-day as one of the best on this continent. While acknowledging the difficulty of following such a thorough-going President as Dr. Mills, we yet believe he has that in him which will ensure success, and therefore can only wish him God's speed.

In Mr. Cowan, his successor, we have one acquainted with fair work, bright and active, and I bespeak for him the cordial and loyal support of this Association.

We are greatly pleased to again have the Hon. Minister of Agriculture taking part in our programme, and presiding at our meeting this evening, recognizing as we do at all times the very deep interest taken by him in agriculture.

We also extend to all the other gentlemen taking part in our programme our thanks for their efforts in our behalf.

In concluding, I trust our meeting together may result in much good, and that in all our deliberations we may seek to advance the cause we have so much at heart, ever striving to maintain that generous and friendly spirit which has always pervaded our gatherings.

Rev. C. B. Clarke : I notice a reference to children's work at your exhibition ; I should like to hear how this matter is conducted by you.

The President: For one thing, we have an apple-naming competition. We take a number of varieties of apples and mix them together; the competitors are allowed in, one at a time, and the prize is given to the one who names the greatest number of varieties correctly, and classifies them as to quality. It is very instructive to the children.

Mr. A. McNeill, Fruit Division, Ottawa: I visited several fairs last year where this feature was introduced, and the interest manifested by the children was undoubted. Some of the boys correctly named forty out of fifty varieties. I think it would be well to extend the system and to introduce it into the Public Schools, afterwards having the children compete at the fairs. This would be a splendid advertising feature. In speaking of advertising, I think the fact is too often overlooked that it is necessary to advertise the show the whole year through. You leave the advertising too much to the newspaper men; that is not sufficient to insure a successful fair.

In addition to the apple competition, an endeavor might be made to introduce various lines of the manual training idea—drawing, wood-work, map-drawing, naming varieties of wood, polishing the same, and the naming of mineralogical specimens—things the children could take up with their teachers; and then have a competition at the fairs in these departments.

The President: The thought that Mr. McNeill has brought out is covered pretty well at our exhibition. We get out a circular for School Children's Day in March or April, and send a package to every teacher in the county to distribute among his pupils. This circular contains the programme for the day, and the list of the children's competitions, with the rules and conditions fully explained. We have prizes for collection of grains, collections of insects, etc., and also for drilling and marching, club-swinging, and children's races. We purpose adding to the list this year, and I consider it one of the best features we have at the fair.

It was moved by Mr. J. W. Sheppard, seconded by Mr. Moody, and carried, That as the minutes appear in printed form in the report, they should be taken as read.

AGRICULTURAL SOCIETY STATISTICS.

By Captain W. F. McMaster, Assistant Secretary, Department of Agriculture.

We have in the Province of Ontario 97 District Agricultural Societies, 383 Township and Horticultural Societies, making a total of 480 Societies. These are required by law to make their returns—consisting of the financial statement and list of members and the names of the officers and directors—to the Department within thirty days of the annual meeting, and forms are supplied to each secretary for this purpose. For 1903, 357 Societies have reported, 27 are in abeyance—that is, the returns are incomplete in some particular.—while there are 95 Societies that have not yet reported at all. This is a regrettable state of affairs, and I wish to draw the attention of this Society to it, as it delays us very much in getting out our statistical report on Agricultural Societies, and besides that it is a violation of the Statute, and might lead to the grant being withheld from Societies that do not comply with the law.

Apart from this, many of the returns come in incomplete, and show evidences of carelessness in compiling them. Often the name of the Society is omitted, and we have to refer to the envelope for the post-mark and trace the society in that way.

Another matter to which I should like to draw the attention of Secretaries is that these returns cannot be sent to the Department post free. Up to the present time, forty or fifty of these returns have been mailed to us this year without postage.

Referring to the discussion on children's exhibits, there is nothing that has a more refining and elevating influence on children than plants and flowers. It is not necessary

to give large amounts in prizes in competitions of this kind. I think the better way would be to give bulbs and plants, which the children might cultivate, with a view to competing with them at the next exhibition.

Mr. Geo. C. Creelman: The unsatisfactory nature of the returns made to the Department by Agricultural Societies is a matter which we bring up each year, but take no definite action, and consequently no improvement results. It appears to me that we are not doing our whole duty in this connection. The Department has been very lenient in allowing irregularities of this kind to go on, believing that the farmers cannot be as strictly dealt with in business matters as men in other lines of business would be. Still, this leniency can be carried too far, and the laxity of the Secretaries in this respect handicaps the Department very much in its work, and creates unnecessary trouble. We are told that this year 95 Societies have not yet reported. There would be a great fuss if the Department were to write these Societies, telling them that their grant would be withheld for the ensuing year; yet, as they had not complied with the Statute, this would be perfectly legitimate; but because it has not been done in the past, Societies take advantage of the good nature of the Department. We had the same trouble with the Farmers' Institutes at one time, and we issued a circular, stating that if the report were not sent in within ten days of the annual meeting, the grant would not be forthcoming. As a result, there was not a single delinquent last season but one, and he had a first-class excuse. I am not saying this as a threat, because I am going out of the Department, and because I do not think it is the right way to go about it, but I ask for your co-operation with the Department in this matter.

Capt. McMaster: In justice to the farmers, I may say that it is the professional men who are the delinquents rather than they.

Mr. W. J. Moody, Berlin: There is no question that the Department should have better consideration in reference to the returns. I think that sometimes the delay is caused by a change of Secretaries.

Mr T. F. Wallace: But the secretary is not changed till the annual meeting, by which time the report and financial statement should be prepared in order that it may be considered at that meeting.

Mr. Jas. Mitchell, Goderich: Might not some of the responsibility be fairly placed on the shoulders of the president? It is the president's duty to see that the financial statement is ready for the annual meeting. Sometimes presidents are very lax in this respect. They should see that their subordinate officers comply with the law. I do not know that any injustice would be done to anybody if the grant were withdrawn in such cases. The president is the highest executive officer, and the secretary is simply his medium, through whom all clerical work of this kind should be performed; and it is the duty of the president to see that he does it.

The President: No self-respecting president would come before his annual meeting without a properly prepared and audited financial statement. The law says that the report, after having been approved by the meeting, shall be placed on permanent record on the books of the Society, and shall also be sent within one month to the Department. What is the practice of the Department where a Society does not send it its returns?

Mr. Creelman: The delinquents are written to until they do send them.

A Delegate: We get no acknowledgment from the Department saying that our report has been received.

Capt. McMaster: We request that the returns be sent by registered mail.

It was moved by Mr. Sheppard, seconded by Mr. Moody: That a specific date be set for making the returns to the Department, and that the responsibility for seeing that it is done should rest upon the president.

Mr. McNeill: Would not the ground be covered by giving the Department the endorsation of this meeting in enforcing the law as it is at present? I move in amendment that the resolution be referred back.

Mr. J. M. Gardhouse seconded, and the amendment was carried.

REPORT OF THE SUPERINTENDENT OF AGRICULTURAL SOCIETIES.

By G. C. Creelman, Toronto.

With the exception of the Legislature itself, the Agricultural Societies are the oldest organization in the Province of Ontario. Their origin dates back as far as 1783, and since that time they have been in continuous operation up to the present. In the early days, fairs or exhibitions were not held, but monthly meetings were arranged for, at which agricultural questions were discussed and agricultural books exchanged.

During the last fifty years the principal function of an agricultural society has been to hold a fair, and this prevails at the present time. In that time very little change has taken place in the nature or arrangements of our shows, if any, except our large city exhibitions, such as are held in Toronto, Ottawa and London. Within the last two or three years, however, a marked change may be noticed. Many Fair Boards have taken on a new phase ; the fakir in many cases has been discontinued, and as better prices for farm products and better methods of farming have come into practice, many of our fall fairs have risen to meet the new conditions.

Live Stock. In live stock classes particularly, we note a marked improvement. This means much more than might be noticed by the casual observer. Eighty per cent. of all products grown on our Canadian farms is fed to live stock. Therefore, any thing which will tend to improve the quality of our horses, cattle, sheep, swine and poultry will add materially to our national wealth. We are a people entirely dependent on agriculture in this Province, and the general intelligence and capabilities of our people can probably be shown in no clearer light than when we look into our live stock statistics. Ten years ago, there were reported in this Province 2,057,882 head of cattle, valued at $47,718,025. In 1902, we find very little increase in number, viz.. 2,562,584 ; but their value has increased until now we find them worth $63,517,342. Our swine, ten years ago, were valued at $6,622,129, while to-day they have nearly doubled, being worth $11,262,265. Our horses also have increased in value to the extent of $5,000,000, while our farm property, including buildings, implements, and live stock, totals over one billion dollars in cash ; and all these improvements have been accomplished without increase in the population.

I have not time to go into all the reasons which have led up to these improvements, but I would like to use one illustration,—that of the bacon hog. Five years ago, not five per cent. of the hogs of the Province of Ontario were of the type now required for the best trade of English breakfast bacon. To-day, we find seventy-five per cent. good marketable animals, and the price has advanced almost in proportion to the quality of the stock The Hon. Mr. Dryden, Minister of Agriculture, consulted our pork-packers and leading swine producers, and found out what the market was demanding and for what the packers were prepared to pay something above the ordinary market price. When this was ascertained, three things were done, with the object of increasing the proportion of good ones and thereby decreasing the proportion of pigs unsuited for the requirements of the market :

(1) Judges were appointed to the Ontario Provincial Winter Fair from the pork-packing establishments themselves. They were instructed to judge all the hogs that came under their inspection from the standpoint of their qualifications to make good breakfast bacon. This created no end of discussion. Those who were used to the thick, fat animal, declared that the pigs which took first prize were lean and unfinished, and if killed in that condition, would prove unprofitable. The Minister knew he was right, and caried the war still further.

(2) Hogs of the proper type were selected and photographed. Some thick, fat hogs were treated in like manner. These photographs were enlarged, and each Farmers' Institute delegation were instructed to display these photographs, and make a short talk at every meeting held in the Province of Ontario during the coming winter. In this way, 147,000 farmers listened to the addresses, and heard the discussions on the subject of "Improved Bacon Hogs," during the first year.

(3) A number of the fall fairs of the Province were solicited to help in the work, and they responded by adding classes for bacon hogs, and appointing judges who know the requirements of the markets.

And so the breeding of swine in Ontario has been revolutionized in such a short time that the great-grandmother of the pigs of to-day would hardly recognize her own offspring.

Expert Judges. When live stock came to occupy such an important place in our general economy, the necessity for its proper classification at once became apparent. Certain animals on the average farm are helping to pay off the mortgage, while others in the same flock or herd are not paying for their board. It was with the idea of helping the farmer to distinguish between these two classes that the Department of Agriculture undertook to name competent judges for our fall fairs last year. One hundred and fifty-two fairs took advantage of the offer of the Department, and were supplied with competent men to judge their live stock. The indications are that there will be a greater number in 1904.

The principal advantage to be derived from competent judging of live stock is that the young farmers, who are looking about for pure-bred animals to improve their herds and flocks, will, if the animals are judged according to their merits, be in a position to select animals of superior quality. On the other hand, where the judging is not well done, many thousands of dollars of injury has been done Canadian live stock by farmers using such animals in their herds as have been given a premium when such animals were not what the highest-priced market demanded.

Educational Features. Fair Boards are generally beginning to realize that in order to attract the best people in the community, they must at the time of their fairs exclude from their grounds such side shows and other performances as are vulgar or dishonest. The fair grounds must be a place where neighbors and acquaintances can meet together and renew former friendships, where instruction may be obtained in better methods of farming, where the latest and most improved farm machinery can be seen in operation, and where the best products of the farm and garden can be shown to the utmost advantage. Now, all this means persevering and painstaking effort on the part of one or more men in each community.

There never was a time in the history of agriculture when the farmers of this country were crying out for instruction as they are to-day. The Agricultural College is full almost to its capacity. The Short Course in Live Stock Judging is proving most popular. The Dairy Schools have their quota of young men and young women. The Farmers' Institutes were never more popular than at the present moment; and 6,000 women have banded themselves together in Women's Institutes, and are crying out for better methods and better management in the home.

What is our duty in the matter? Where do we, as Fair Managers, stand in this educational battle? Are we seriously endeavoring to instruct our people, or are we striving to entertain only? Is it worth the fight to work up attractions to secure a gate receipt sufficient to pay for the attractions? Some of you are doing this. Others go to the other extreme. The directors work hard, put on a good show, offer large prizes,—all for the benefit of half a dozen men in the community. What I would plead for now is not for a revolution in your methods of operation, but that you get as far as possible the best return for your money expended. If you have good stock on the grounds, let them be brought out; and hire some one to explain their good points to the people. The same applies to fruit, poultry, grain and roots.

Some Suggestions for Future Work.

(1) Labelling Exhibits. Have your exhibits properly labelled; and while it would take some little time to prepare a description of a life history of the products shown, it would more than repay you for the time spent thereon. For example, if one man shows superior varieties of grain, there should be a card attached, plainly naming the variety, the conditions under which it was grown, and so forth.

(2) Better Show Rings. Try to remember that your show is not run for the entire benefit of the exhibitors. Those who have paid their money at the gate are entitled to see and hear what is going on. This cannot be accomplished amongst the live stock without better show rings. This is most important ; and you will be surprised to find the amount of interest that will be taken in your judging just as soon as you have provided a proper ring for the animals and the judges.

(3) Platform for Judge. There should also be a slightly elevated platform on which the judge can stand to give his reasons for the awards. Many of our judges report that last year they could only be heard by those immediately surrounding them, and people twenty feet away were not aware of what was taking place.

(4) Prize Lists. A number of the prize lists need still further attention. To give one illustration, I would advocate the doing away entirely with the general purpose class for horses. One of our judges of 1903 reported in this connection as follows : At M——— there was only one team in the general purpose class, and they were not worth more than $200. Yet, they took three first prizes, amounting to nearly the value of the animals. Continuing the same, the judge said that of the nine fairs he had attended, not a single general purpose horse under three years of age came before him; that is, not one fit for the "carriage or saddle," which are two of the principal requisites in a general purpose horse. Most of our horse judges also agree that the agricultural class is all right. Most of our judges also recommend that the saddle horse should be encouraged more. Farmers' boys should be taught to ride and break horses into the saddle. Our townspeople ride a great deal, and they prefer buying their horses direct from the farm, rather than from a trader. In the latter case, the horse has been taken too late to make the very best kind of a saddle animal.

(5) Women's Work. This should be encouraged. Every fair ground should have a department, or, better still, a tent or separate building that the women can call their own. Here they could display the products of their own hands, and in addition, have practical demonstrations in different kinds of home work, including butter-making, cooking, and so forth.

(6) Children. I am pleased to see that school children's day is becoming a common feature of many of our fairs. Sports are arranged and the children are rewarded for the different contests,—the naming of miscellaneous assortments of apples, prizes for collections of leaves, weeds, and insects, and so forth,—all interesting and instructive.

(7) Experimental Plots. This subject is down for special discussion at this meeting. I know of no one feature of our fairs, apart from competent live stock judging, that should prove of such special interest to our farmers. Six shows adopted the plots last year, and I think it could be arranged with the Department to help, say, a dozen, during 1904.

(8) Programme. I was pleased to receive a number of splendid programmes last year. They stated just what was going to take place at the fair, and at what hour. With such system, it will not be long before your patrons will materially help you in carrying out your programme by being at the appointed attractions at the time they are advertised.

(9) Buildings. At the last meeting I was requested to correspond with the different Fair Boards in the United States and Canada, and if practicable to prepare plans for a model fair building. I conducted the correspondence, but found opinions differing so much that I am forced to the conclusion that no one set of plans will suit half a dozen fairs. I am also of the opinion that the large Main Building, to contain all sorts of exhibts, is a mistake. Single buildings for certain classes of exhibits are proving much more satisfactory. So many fairs have been crippled financially by the loss of their main building, that it seems to be a mistake to put so much money in one place. Separate buildings also serve to divide the crowd, and thus prevent the jamming that is so often seen at our one-building shows.

(10) Your Secretary. In this connection, I would say,—Get the right man. Then pay him well and hold him responsible for the success of the show. The directors

can do just so much ; and the president can help just so far ; but the success or failure of the show will depend upon the amount of energy and intelligence displayed by your secretary.

(11) Local Associations. In my opinion, it is most desirable that representatives of the different Fair Boards in each district should get together and discuss the needs of that particular district. They should then try to give prominence in their prize lists and on their fair grounds to those features of agricultural work that are most common and most profitable in the neighborhood. For instance, if dairying is the principal industry, then a large part of your money should be expended on dairy cattle, dairy implements, dairy demonstrations, and so forth. If it is a purely fruit section, your fair should be largely a fruit fair.

If, therefore, your different Fair Boards would form a local association and hold regular meetings, you could discuss subjects of particular interest to your district to much better advantage than can be done in an Association such as I am addressing today. Three such societies have already been organized, and are doing very good work, —one in the Niagara Peninsula, one in the Ottawa Valley, and one in the Midland Counties. The Superintendent should be with each of these organizations at their meetings, try and find out their needs, and then assist to carry out a policy that would be to the best interests of each and every show in the district.

(12) In conclusion, I would like to say that I have never enjoyed work more than that connected with the Ontario Fall Fairs and Exhibitions. For three years I have endeavored to find out your needs, and may have helped you so far as I was able, and I now leave this branch of the work with reluctance to take charge of another phase of the same subject at the Ontario Agricultural College. For this Institution I ask your whole-souled support. It is your school, and I want you to keep in touch with it ; and if I can in the future at any time say or do anything to advance the interest of the Canadian Association of Fairs and Exhibitions, I trust you will find me ever ready and willing.

Mr. A. McNeill, Ottawa : There are two or three points in the Superintendent's address which appear to me to call for special emphasis. First, as to the educational value of our fairs. For ten or twelve years I refrained from having anything to do with our fairs, because I had grown tired of them ; but within the past two years I have visited quite a number, and find there is an awakening, especially in the direction of giving the fairs an educational value. If our fairs are merely to entertain, let them be taken in hand by a theatrical company. Everything should tend towards education. For instance, the label on the articles exhibited may seem a trifling matter, but as a matter of fact, it makes all the difference between a show being of some value to the visitor or of no value. Last week I attended a fruit fair at Charlottetown, P.E.I., where they had the best example of labelling their exhibits that I ever saw. Each exhibit was labelled with a large card, giving the name of the variety, etc., in large lettering, written by an expert card writer. This card was so constructed that it would stand upright wherever it was placed, and could not easily be upset.

Another point I wish to emphasize is the importance of having a programme for the day which will serve as a guide for visitors. You often observe visitors at fairs wandering aimlessly about, because they have no particular idea of what is going on or where to find it. Your daily programme should give the time at which everything is to take place for that day. This idea might be carried still further by having the different events announced by megaphone, or some such means, so that it could be heard all over the grounds ; or the events might be written upon a large blackboard.

At one fair I visited they had two men on horseback running messages. This is a capital idea and costs very little. As a rule, if a judge wants anything done, he has to do it himself. If I am demonstrating apple-packing, for instance, and want a barrel moved from one place to another, and ask the secretary for a man, he would probably say : "Why, we have not got a man"; and the secretary has either to do it himself or

else I have to do it, and spoil a suit of clothes, perhaps, in the operation, and I cannot afford a new suit every day. A few dollars spent on conveniences of this kind would be a great improvement.

W. F. Kidd, Simcoe: I am one of the expert judges of horses sent out by the Department, and the suggestions I have to make I have seen carried out successfully at some of the fairs which I have visited during the last two years, and they could be adopted at all our fairs with advantage. I notice that at many fairs judging is not commenced till one o'clock in the afternoon. At such fairs, when the judging is concluded, there is no time left for the visitor to obtain any educational benefit. I have seen the first prize sheep, for instance, put into the wagon and taken away before the second prize was awarded, simply because the judging could not be concluded at a reasonable hour, for the reason that it did not commence, say, till two o'clock. The judging should commence at ten o'clock in the morning. I find that in many instances the judges are asked to keep the judge's book; in other words, to find out the number of entry,—and often the only way to find it is to go through the exhibitor's pocket and pick out the entry ticket. This is not the judge's work, and takes up altogether too much of his time; it should be done by the superintendents of the classes.

Another difficulty I find is that, at many fairs, roadsters and carriage horses are classed together. No judge can give satisfaction when judging under such conditions, as these are two classes by themselves, and should not be judged in competition with one another. I would not advocate that colts should be kept separate, as there is no object in this unless you have a very large entry list. Mr. Creelman referred to a team having received three prizes. In the instance referred to, different people had given special prizes for the best general purpose team. If the donors of these prizes had consulted the secretary a different arrangement would have been the result. I once saw a poor carriage horse get six first prizes under similar conditions. That kind of thing does not please the people. It is far better to divide up the good things. The more who get a share in the prize money, the more there are who will be made happy. In one case I know of the rules of the Society provide that no horse shall receive more than one prize, and it works very well. This Society also has a rule that no exhibitor in carriage classes shall show more than one entry in each class. This prevents the professional horse dealer from carrying off all the prizes. It is a first-class thing for the farmers that these men should make exhibits, as they are of great educational value, but it is not well to allow them to take all the prizes.

The much-vexed question of the "general purpose" and the "agricultural" horse is a stumbling block to the judges at nearly all the fairs. There is much difference of opinion as to what constitutes a general purpose team. At the Toronto Fair last year a jumper and a driver got first prize as a general purpose team. This to my mind does not fill the bill at all. In my opinion, the term "general purpose" should be dispensed with altogether, and the class should include only what we call the "agricultural" horse, one weighing from 1,300 to 1,350 lbs., which is one of the most useful weights we have.

Another difficulty we have is where there is a class for a heavy driving team to weigh so much. There are different ways of getting around that provision, and it is an easy thing to run up against a protest. I would, therefore, suggest that the provision as to weights be left out entirely. The same trouble comes in in connection with height; some prize lists provide that the height shall not be less than sixteen hands. If you give only one prize for carriage horses, make no restriction as to height; leave that to the judge; otherwise you may bar out a smaller horse that is worth a hundred times as much as its competitor which measures sixteen hands.

I would strongly advise persons who give special prizes to consult with the officers before deciding for what class they shall be given. If you can arrange so that several participate in a prize, rather than one getting the whole of it, it will give a great deal more satisfaction and do much more good to your society.

Do not place conditions in the prize list which you cannot carry out. In some prize lists the provision is made that a horse shall not receive a prize unless he is sound. In

theory that is correct, but there is often a difference of opinion as to a horse being sound, and this difference may often give rise to a protest.

Rev. C. B. Clarke : In the Russell County Agricultural Society prize list we have a general purpose class and an agricultural class as well. We do not feel disposed to shut out the general purpose horse, because the man on the small farm wants just such a horse. It does not pay to raise horses on a small farm, nor can he keep many horses with profit ; when a horse wears out he buys a new one, and he requires one that he can work on the farm and drive to market. Therefore, as the horse for a small farmer, we think that the general purpose horse has its place.

Prof. G. E. Day : Do you state in your prize list what constitutes a general purpose horse ? The objection to the class appears to be that it is hard to define what it is ; some people take the term agricultural horse to mean general purpose horse.

Rev. C. B. Clarke : I think the distinction should be based upon weight.

A Delegate : In reference to the specifications for fair buildings, in moving the resolution last year, my idea was not for one large building ; the resolution reads "set of buildings." My idea was to get plans for a uniform set of buildings that would be within the means of an agricultural society. The Department could probably procure better plans than any individual society could devise, and it would mean a great saving to societies in the matter of cost.

Mr. Creelman : You well remember that the discussion following related to a main building.

A Delegate : I think we shall all agree with the Superintendent that one of the great objections to our exhibitions is their similarity. You hear people say : "What is the use of going, there will be the same large pumpkin and the same mammoth squash, etc.?" There is no real reason for this similarity. In the County of Lincoln, from which I come, one of the chief features of the district is fruit-growing. In other sections horse raising or cattle breeding, or dairying may be the chief feature. We should therefore adopt a system that will bring the chief product of the district prominently forward and make it the leading feature of the exhibition. This would do away with the similarity and arouse much greater interest. In large exhibitions, such as the Pan-American, the money expended in buildings is never compensated for in the gate receipts, but the benefits derived from the advertising far outweigh the expenditure. For this reason many agricultural exhibitions announce that their competitions are open to the world. I think this is a mistake. If the entries were restricted to the locality in which the exhibition is held, and if it were made an exhibition of the best of the products from which the locality is noted, I think it would arouse much more interest.

J. M. Gardhouse, Weston : I shall speak not as a delegate, but as a judge who has attended many fairs in the Province. In my report to Mr. Creelman I made a number of suggestions ; one was that Agricultural Societies should provide a show-ring for stock. This is a very important matter, as a judge has no chance to judge properly unless a ring is provided. The platform suggested is also an excellent idea.

Many judges have too much work to do, especially when one man has to judge both horses and cattle, as is often the case, and there is a large number of entries, as at the western shows. At one show where one judge had to judge in both classes, it took him all day to judge the horses, and some of the cattle were taken home without being judged. The judge maintained that he should be allowed in a case of this kind to state which class he should judge first ; but in my opinion the responsibility should rest with the directors. At the fairs I visited I was judging horses only, but found I had all I could do, and sometimes more than I could get through satisfactorily. I suggested to the Superintendent an arrangement whereby the two expert judges sent by the Department should devote their attention to judging horses and beef cattle, and that a third judge should be provided to take sheep, swine, and dairy cattle. Of course, it is hard to estimate the number of entries, and how much work there will be for the judges ; but if you could get the entries and the prize list, I think it could be arranged in that way, and

thus materially lessen the work of the judges. If a judge has too much to do, he has not a chance to give his reasons, as he ought to do, and as the people expect him to do.

Mr. Edward Jeffs, Bond Head : As to judges giving their reasons for their awards, I always made it a point to give the reasons where the same man took first and second prizes, but where this was not the case, and there were a large number of exhibitors, I do not carry this out always, as it is rather ticklish business.

Prof. Day : I would suggest that in giving his reasons the judge should lay special stress on the points in which one animal excels another. He should not start out by saying that an animal is bad here, there and elsewhere. He should be careful not to give the impression that the animal he has turned down is a bad one, because it is apt to reflect on the exhibitor. If a judge is not careful in this respect, he is likely to do more harm than good in giving his reasons ; the other plan is by far the better.

The President : A judge must have judgment and tact, and I assume the Department selects men who understand this.

Mr. A. Gifford, Meaford : The only objection I heard against the system was where the judge pointed out the defects of an animal ; the exhibitor complained that he was perfectly well aware of the bad points of his animal, but he did not want them advertised.

Mr. A. McNeill : In judging fruit, I never feel satisfied unless I have a chance to give my reasons, and I feel that there is something wrong with my decisions if I cannot explain to the exhibitor why I gave the award as I did.

Prof Day : There is a difference between fruit and live stock ; in one case a man's reputation is perhaps at stake as a breeder, for if the judge is not careful, he may give the impression that a man's stock is inferior.

Mr. J. E. Brethour, Burford : I have acted as an expert judge for three years, and in making awards I have endeavored in every case to give my reasons. I was a judge in the Ottawa Valley district, where we were advertised to give our reasons. In some cases I felt a little backward about giving reasons ; but I was always careful not to find too much fault with the animals ; I would rather say that an animal was superior in such and such a point. When appealed to by an exhibitor for further information, I would give it to him privately, if necessary, and show him where his animal was deficient ; that was always satisfactory to the exhibitor. I think the day has gone by when the judge in giving his awards can remain silent and look wise ; people want to know whether an animal is really superior or not, and why ; it is not a mystery, but something that newspapers and the public must know.

Speaking as an expert judge, I think that too many of our exhibitions are run, as Mr. Creelman says, apparently for the benefit of the exhibitors. I find that more especially the case in the weaker shows ; shows at which everything the exhibitor says goes are usually not the most successful. At such shows it is a common practice to move an animal out of the way as soon as it is judged, and the visitor cannot see it, except at the pleasure of the exhibitor. This should not be allowed, and an effort should in all cases be made to study the pleasure and profit for the visitor, rather than the exhibitor, who is rewarded for showing his animals, and has a right to do something in return for the general public.

Another point mentioned by the Superintendent was the professional exhibitor. It was suggested by one delegate that it would be a good plan to limit each exhibitor to only one prize in a class. That has been my opinion for several years. It is the practice of some breeders to fit up a string of animals and make a strong exhibit at Toronto and other large shows, afterwards exhibiting them at a circuit of small fairs, where they win all the prizes. Where that is done, the smaller men will not show against them ; they know that these men will be present from year to year, and they refrain on that account from competing. We should endeavor to bring out the young exhibitor at our fairs. If you allowed one prize only, it would overcome this drawback, and give the local exhibitors a chance to secure a share.

We have instituted a judging competition for boys at our small fair, and it has created a great deal of interest. You can do no better work than to interest the boys in the exhibits, and the money spent in prizes there will be used to the best advantage. We have held these contests for two years. The first year, the reasons given by the competitors were very curious in some cases ; but I acted as examiner last year, and was surprised at the improvement shown, and the knowledge some of these boys had of the animals presented. I do not think you should bar a boy the second year because he wins a prize the first year. If you get the boys interested in these things, they will leave the side shows and similar attractions.

I think it is very desirable that there should be different buildings for different exhibits wherever it is possible. Where all the exhibits are in the one building, there is a great deal of confusion, and the same interest is not manifested that would otherwise be the case.

Delegate Ming, Lennox County : We allow a man to take only one prize in a class, and it has always worked well. At Picton they allowed an exhibitor to take first, second and third, and in consequence outsiders carried off everything, and the local men have lost interest. If it were not for the eight or ten exhibitors who go over from Lennox, Picton would have no fair at all. At our fair we have a great many breeders of Shorthorns, Ayrshires and Holsteins. Our general receipts are over $1,600, and we pay out $1,400 in prizes. Kingston allows a man to take first, second and third, and they are going into the hole ; it is the same with Belleville. With regard to "leg shows,"—or paint, putty and curves, as I call it,—I would cut that out ; we cannot afford it. I do not see why the Government should distribute public money to be paid to a lot of fakirs. I know from experience that county societies which hold a one-day show and make a big day of it, draw all the people from the immediate neighborhood who are likely to come. If you extend the time for two or three days, and put on an entertainment that will draw people from 25 miles away, you will not materially increase your gate receipts, and you will pay them all for these attractions. No society can afford that.

Small exhibition buildings may be all right, but if you have a large building, with an upstairs, it will accommodate all the exhibits of a good-sized fair, if it is well arranged inside, and you engage a band and some singers for the evening and hold an entertainment, charging ten or fifteen cents admission, which will probably net you $75.

A Delegate : I remember that some years ago at our show, the Shorthorn exhibit was a very poor one. After a time, however, a breeder secured some good cattle and took all the prizes, and the other men discontinued making exhibits in consequence. That man certainly was an educator, and it is a question in my mind whether by allowing him to take all the prizes and encouraging him to exhibit you were not doing more for the community than by restricting him to one prize. I believe that a man who exhibits well-bred and well-cared-for cattle will do more to benefit the stock industry than anything else. I would not, however, restrict the prizes to pure-bred animals, but would award some to grades as well. As to expert judges, the only fault we have to find is that we cannot get enough of them. We were supposed to have two last year, but managed only to get one. We had only one judge for horses and cattle, the latter including thirty head of Shorthorn. The judge took the horses first, and it took till six o'clock to conclude his work on them, and at that hour men were allowed to remove their exhibits, and some took their cattle away.

Mr. Creelman : At what time do you require that the cattle shall be on the ground ?

A.: At ten o'clock in the morning

Mr. Creelman : Did you start judging then ?

A.: No ; not till two o'clock. It would have been all right if the cattle had been taken first, as they could all have been judged in one hour.

Mr. Creelman : But I did not know that.

The President : The gentleman will have the advantage of past experience to guide him next year.

A Delegate : If it is a benefit to allow an exhibitor to take only one prize in a class, I think it should receive the endorsation of this Association.

Prof. Day : There is one point I should like to emphasize in connection with this matter. I acted as a judge at a fair where an exhibitor was allowed to take only one prize in a class, and I was not at all satisfied at the way it worked. I disliked very much to turn down a good animal, and give a poor one second place, simply because the owner of the good animals has already captured a first prize. While such a rule might work satisfactorily at some fairs, it would be unwise to adopt it at others. If a fair is situated in a district where there is a large breeder who exhibits at a circuit of fairs, it might be an advantage to make a regulation of this kind to prevent that exhibitor taking all the prize money, because his animals have been specially fitted for the large shows, and it comes hard on the small exhibitor.

There is another point in connection with this matter which we should not lose sight of. The primary object in connection with a fair is education, and not merely to distribute prize money among exhibitors It seems to me, therefore, that a proposal to restrict the prizes, thus making the show unattractive to the large breeders, should be very carefully considered by a fair before it is adopted, and that it should be considered with special reference to the particular district. I believe that in some districts it would be a great mistake. I judged at a fair last fall where this regulation was in force, and in many instances I felt that the work was the opposite of educational in its character, because I was sometimes forced to give the second prize to an animal that did not merit it, and was inferior to the one that did not get a prize. A great many in the crowd do not understand what the rule is in such cases, and it is therefore very misleading.

Mr. Edward Jeffs : I think that an exhibitor should make only one entry ; that would do away with the difficulty Prof. Day refers to.

Mr. Kidd : I had reference to carriage horses only when I spoke on this subject. In our section we have one of the largest horse dealers in Ontario, and a great deal of opposition was aroused as to that dealer entering at our fair ; but we considered him a great educator, and we arranged the prize list so that he could not make more than one entry in each class. He was perfectly satisfied at this arrangement. I would not advocate it in any other class of stock.

Mr. Wallace: I had reference in my remarks to cases where there was no competition : in such cases I think that only one prize should be awarded. If there is competition, and the exhibitor can take three prizes, I would allow him to have them.

It was moved by J. W. Sheppard, Cayuga, seconded by W. J. Moody, Berlin, and carried.

That this Society uphold the Department of Agriculture in enforcing the provisions of the Agriculture and Arts Act, in reference to the sending in by secretaries of the annual reports of Agricultural Societies.

POINTERS ON KEEPING FAIR BOOKS.

By Dr. A. W. Bell, Toronto.

In these days of keen competition, the cry among exhibitors is against the placing of names on the entry cards, and instead to give only a number to each exhibitor. Personally, I cannot understand why this is demanded, especially in the stock sections, where, 99 times out of 100, the stock is led into the show ring by its owner. How much more of a certificate of ownership does one require than the presence of the owner in the ring holding his own animal ?

Owing to this feeling a plan for entry books has been evolved. Each exhibitor has a certain number assigned him, this being the only distinguishing mark on his entries.

INDEX FOR NAMES OF EXHIBITORS.

No.	Names of Exhibitors.	Residence.	Entry Fees.	Ticket Fees.	Stall Fees.	Misc'l Fees.
1	Ames, Joseph	Bangor, Ont.				
2	Arnold, Benj. R.	Prospect, Ont				
3	Avery, Henry	Brighton, Ont				
4	Aggus, John	Brighton, Ont				
etc.						
15	Brown, James	Boston				
etc.						

List of Premiums. To be copied from your list.	1st Prize.	2nd Prize.	1	2	3	4	5	6	7	8	9	10	11	Awards. 1st	Horses.
Class 5—Shorthorns.															
Bull, 3 years and over	10.00	7.00	4	15	49	45	33	1							Cattle.
" 2 years	7.00	5.00	34	49	33	4									
" 1 year	5.00	3.00	1	45											
" Calf	3.00	2.00	2	34	15	49	45	1							
Cow, 4 years and over	8.00	6.00	45	49	1										
" 3 years	7.00	5.00	45	49	1										
Heifer, 2 years	5.00	3.00	4	33	45	34									
" 1 year	4.00	2.00	45	1	49	49									
" Calf	4.00	2.00	9	15	49										

This entry book consists of an alphabetical index numbered from 1 to say 500. When Mr. Aggus makes his entries, his name and address is inserted in the index opposite a certain number, say 4. All his entry cards bear this particular number. This method has a serious drawback. If an exhibitor can influence the judge it is easy for him to give the judge this index number, who, if he is so inclined, can favor this particular exhibitor.

To overcome this, the index number need not be used at all. On the entry card give the number in each section, the exhibitor is on that particular card. By changing the order of his entry in each section in which he is entered it is impossible for any one to follow his entries, except the Secretary.

We will suppose Mr. Aggus wishes to enter a Shorthorn Bull, two years old. We first enter up his name in the index opposite number 4. Then turn to the cattle department, where there is a class of these, and enter Mr. Aggus's number only in column 4, because there have been three other entries made previously in the same section. In filling out his entry card, either his index number or the number in the section he is in is placed on this card, but no name.

One can readily understand how quickly entries can be made by this process, especially if the one exhibitor is making two or three entries in one section. A good entry clerk, with an assistant, should easily make 1,200 complete entries in one day. As soon as the entries are received, enter them in the index, which also serves as a cash book, as far as fees are concerned, giving the entry sheet the same number as the index does. When numbering the sheet do it with a heavy colored pencil, in a conspicuous part, so that you may readily find the sheet if necessary.

Before the show opens, all the entry sheets should be bound together in their numerical order, which in these cases happened to be the alphabetical also. This can easily be done by perforating them with a Shannon clip, string being inserted through the holes thus made, and covered with a piece of cardboard in front and back. By doing this one has all his entries at his fingers' ends, and no one can take away a single sheet without taking the lot.

Judges' books act on some judges like an attack of nightmare. The more simple they are, the more liable are they to be filled in properly. Those that save the most time, when time is precious, are the ones having the number of entries printed along the margin, say, from 1 to 15. When entering them up for the judges, all that is necessary is to fill in the heading, which should be done long before the show opens. Supposing there are ten entries in a class, the number 10 has a stroke of the pen run through it. This can be done much more quickly than if one undertakes to put down 1 to 10 in numbers.

I have some judges' books where it is simply stated there are — entries in this class. This is also a very quick plan, but the objection to it is the judges like to check off before commencing their work in that section all the entries presented to them, to see if all the entries the book calls for have been brought forward. The prize cards should be all filled in except winner's name before the show opens, though you will find a great number of secretaries expect the judges to do this also As the judge's time is generally limited, and they have a good deal to do, this is generally asking too much of them.

I recently saw a combination entry and prize card. It was apparently a common shipping tag, with the usual terms on an entry card, and in the centre there was a large, round space. This space was to be used if the specimen received a prize, to have the award designated by a sticker, in colors, with the words "first prize" on it, or second, or third, as the case might be. This would save the filling in of the prize cards, no small item.

Another important item is to insist on entry fees being paid in full when exhibitors make their entries. It would save much time and confusion at show time, when the secretary generally needs all the time possible.

ADDRESS.

By Hon. John Dryden, Minister of Agriculture, Toronto.

I am glad to observe that great interest is still manifested in this association, as indicated by the large number present.. I think I am justified in congratulating you on the great improvement that has taken place in the agricultural exhibitions all over the Province. I do not say that improvement has been effected in every instance, but I can say that a large number of the societies have adopted new ideas, and that these ideas have always, as I understand it, been beneficial in their character. I know from personal knowledge of much good that has been already accomplished through changes adopted because of the influence of this association.

I desire further to congratulate you on the better sentiment which prevails among the people with regard to the work of our agricultural societies. A few years ago there was no disposition on the part of our best citizens to give their assistance to, or to take any prominent interest in this work ; but latterly I think I discern an improvement in the sentiment of the people generally, because there seems to have been new life taken on by the agricultural societies, and their work is taking a somewhat different direction.

Another thing that gratifies me, and must gratify you, is the desire manifested by the great masses of our people for as much information as can possibly be obtained through the medium of the agricultural society ; they are learning that these exhibitions can be and ought to be more educational in their character.

We are apt to congratulate ourselves in this country that we have a law on the statute book which gives the people the right to organize an agricultural society in every municipality. This scheme is splendid in theory, but it does not work out as satisfactorily in all cases as one might expect. The location of an agricultural society is sometimes such that the position of the towns and the railways and the principal roads is not conducive to the success of the society. You sometimes find yourself handicapped because you have a society in each of these municipalities, so that the work of one society overlaps that of another to a large extent, and there is what I call a "scatteration" of effort. This is exactly the opposite of what we desire to see. What those who have studied the question would like to see, is a gathering together of these forces and a centralization of effort, so that, instead of having a number of weak societies in a district, as is too often the case, we may have one strong society. The policy in the older counties in recent years has been towards centralization. In the district where I live it is now a long while since we had township organizatons at all, and I do not suppose that anyone there would desire to go back to the old system. We are not perhaps doing as much good as we ought to do, or as we might do, but we should certainly not improve that work by returning to the old conditions. One of the great advantages to be gained from centralization is that you can arouse a great deal more enthusiasm among the people, and that is a necessity if you are to attain the greatest success. If you are to do your best work, you need the sympathy of all the people, and of all classes of the people. The agricultural society should appeal not only to the man who works on the farm, but the man in the store and the factory, the banker and clergyman; in fact to every person in the community. You will do your best work when you have the active interest and sympathy of all these people. If we are to have that sympathy and interest, it is perfectly plain that our fairs must be as clean as it is possible to make them,—that is to say, all features that may be termed objectionable must be removed. We have altogether too many societies that still admit the fakir element to their shows, and these people undertake to put up all sorts of fraudulent exhibits and amusements, some of them descending even to gambling devices. Certain societies are willing, on receipt of trifling sums, to allow these people on the grounds, as though some great benefit would be derived from their presence. These fakirs are not working along that line, you may be sure, as all the benefit connected with it goes to themselves. We know they do not go away poorer than when they came, as they secure possession of somebody's money. I have no hesitation whatever in speaking plainly my opinion of this matter; my attitude is absolutely against this kind of thing, and I do not believe you are doing yourselves justice when you permit it to go on. I believe that such attractions should be discarded altogether—let our people get on a higher plane in reference to this matter—and by so doing they will undoubtedly achieve greater success.

I have given notice in the Legislature of an amendment to the law, which will empower a proper officer, without consent being given, to enter upon the grounds of any agricultural society and put these people out of business. (Hear, hear.) If you approve of that I should like to hear you clap your hands. (Applause.) I believe in taking the ground that the good sense of the people will prevail,—that they will say it is right, and that it is sound doctrine. We cannot afford to see our farmers' boys educated in that kind of a school; and you many depend that all such influences has a decided effect on the character of the young men who go there.

My department is busy, and this association is busy, studying out how we may produce the greatest quantity of good beef and bacon, but we must not forget the influences that go towards making the best men and women in this country. (Hear, hear.) I am going down the other side of the hill now, but I love my country well enough to be anxious to see our young people have a little more moral fibre, a little more definiteness and steadiness of purpose. I want them to become public-spirited citizens, who are willing to sacrifice a little, if needs be, for the country's good. One of the difficulties you meet with in conducting your exhibitions is to find vigorous, active young

men who are willing to sacrifice a little in order to take hold of these matters and push them forward to success. Let us get away from that which is debasing at out fairs, and present only such attractions as will induce higher ideals among our people. Anything I can do to help in that direction will be done willingly ; but it is your work, as these agricultural societies are locally controlled,—they belong to the people. No government can interfere with you so long as you keep within the bounds of the law, but you are not within the law when you introduce these attractions. They are winked at in many instances because the society gets a five or ten dollar fee out of them. All I can say is that it is a bad way to make money, when you run the risk of false education to those who gather together on such occasions. (Applause.)

STOCK JUDGING CONTESTS AS EDUCATIONAL FEATURES.

By Prof. G. E. Day, Guelph.

Every man cannot become a Bakewell, a McCombie, a Bates, or a Cruickshank in the art of stock-breeding. It is given only to the few to attain distinction in any calling, yet the great army of workers of whom no person hears, is essential to the existence of those to whom we accord well-deserved applause.

For example, Amos Cruickshank sought to evolve a type of Shorthorn which would be profitable for the tenant farmer to feed, and which would furnish the consumer the most desirable quality of beef. But Amos Cruickshank, working alone, could have very little influence upon the quality of the beef of Great Britain. Before his work could produce its full effect, it was necessary that the tenant farmer should appreciate the merits of Cruickshank cattle, and see this blood in the production of market stock.

In the improvement of all classes of live stock, utility is the final court of appeal, and decides upon the merits of each man's work. The pure-bred herds, flocks, and studs of our country exist for the purpose of improving the quality of beef, mutton, or bacon placed upon our market, in the case of meat-producing animals ; of increasing the cash receipts from cheese factory or creamery, in the case of dairy cattle; and of increasing the strength, durability, beauty, and suitability for various purposes, in the case of the market classes of horses. This being the case, the great problem before those who have at heart the advancement of our live stock interests, is how to make the work of our breeders of pure-bred stock more effective ; or, in other words, how to cause the producer of market stock to see the importance of using improved blood, because this is the key to the whole situation.

It is outside the province of this paper to recount the earnest and well-directed efforts that have already been made along this line. Too much credit cannot be given our Minister of Agriculture for his unflagging zeal in this matter, and yet his efforts will fall short of complete success unless accompanied by hearty co-operation and independent effort on the part of the farmers of the Province. The fall fairs have been doing a good work in striving to stimulate interest in good stock, and yet the directors have no doubt frequently been discouraged by the apparent apathy on the part of the average farmer. It is hard to induce a matured man to leave the paths to which his feet have been accustomed; but, in spite of discouragement, we must keep up the fight, and if we cannot successfully attack the common enemy, the scrub, in one quarter, we must look for a more vulnerable point, and redouble our energies. It seems to me that our greatest hope at the present time rests in getting hold of the young men of the country. Their path in life has not yet become a deep rut, and they are not afraid to follow new trails. They have ambition, and ambition is the mainspring of success. If we could only stimulate that ambition and direct it along the line of stock improvement, what might we not hope to accomplish ? I feel, therefore, that I cannot emphasize too strongly the importance of getting hold of the young men.

There are no doubt many ways of interesting young men in live stock, but it seems that the judging contest is one of the most effective means at our disposal at the

present time. Here is something which is open to every young man. It requires no money capital, and gives the ambitious youth a chance to distinguish himself among his fellows. We take a pride in doing those things that we can do well, and the young man who has won a prize in a judging contest will naturally take more interest in the animals which gave him an opportunity to gratify his ambition. To be a successful breeder, one must be a good judge, and therefore by encouraging the study of stock judging we are strengthening the very foundation of stock improvement. I would therefore urge upon the members of the Fairs Association the importance of stock judging contests as a means of interesting young men in live stock, and in this way bringing about, eventually, a bond of sympathy between the general farming community and the breeders of pure-bred stock, so necessary to the full development of our trade in live stock, and to the production of the highest class of animal products. I wish it distinctly understood, however, that I am not suggesting that the stock-judging contest should take the place of anything that is being done in the interests of the breeders of pure-bred stock. They deserve all the encouragement they now receive, and more, too, and if the judging contest is to supplant any feature of the fair, let it take the place of something less vital to the best interests of the country.

It seems to me that the small fairs can do more effective work in conducting judging contests than the large ones, because at the small fair the judging contest would attract more attention, and assume greater relative importance than at the large one. If every fair in the Province could have a well-conducted judging contest, the question of stock judging would be discussed in nearly every rural home in the neighborhood of the fair, and the interest and enthusiasm in good stock would grow from year to year. Ability to judge is almost certain to breed the desire to possess, and here may be seen the relation between stock-judging contests and live stock improvement.

There are a good many difficulties in the way of carrying out a judging contest without a hitch, but they are not insurmountable if the management set about it resolutely, and each contest will profit by the mistakes made in conducting previous ones. If the matter is given into the hands of a capable, energetic, and fair-minded man, he will find a way or make it. The general rule governing the contest will have to be framed to meet the requirements of the particular district, and may require modification from time to time to prevent abuses creeping in. Exhibitors should be required to bring out their stock when the director in charge wants it, and, if possible, the contest should be held before the animals are judged in the regular classes. It is especially important that a time should be set for the contest, and that it should be started promptly on time. At the average fair, there is not time to judge all classes of stock, and it is doubtful whether it would be desirable to do so. The directors must be the judges as to what kind of stock the contestants shall judge. In a dairy district it would be little use putting on a beef class, and in other districts a dairy class would be equally out of place. The kind of stock for which the district is noted should be given special prominence. If thought advisable, cattle and horses could be used one year, sheep and swine the following year, then cattle and horses the next year, and so on. If some one class of stock is especially prominent in a district, it might be brought out every year. For example, in a strongly beef district, one year beef cattle and horses could be used; the next year, beef cattle and sheep, and the next, beef cattle and swine. These suggestions are offered merely as general hints as to how the contest could be adapted to the district in which it is held. It is much better to attempt only a little and do that little well, than to attempt too much.

Where practicable, it is better to have the contestants judge two classes of each kind of stock that is used, that is to say, two classes of beef cattle, two classes of sheep etc. In order to make a satisfactory test, a good strong class of animals should be brought out, and there should be at least four or five animals in each class.

The contestants should be provided with blank paper, or paper on which are printed necessary headings for the direction of the contestants. On this paper they write their awards and their reasons. Some difference of opinion exists as to the relative number of

marks which should be allotted to placing and giving reasons, respectively. If no marks are given for reasons, there is more opportunity for guessing, and if a large proportion of the marks are given for reasons, then the contest becomes more of an essay-writing competition than a judging contest. After considerable study and experience, I have come to the conclusion that out of a total of 100 marks, 70 marks should be given for placing the animals, and 30 marks for the reasons for placing.

The marking of the papers is no small matter, and requires good judgment on the art of the examiner. One of the most difficult matters is to decide what deductions shall be made for mistakes in placing. A competent judge has, of course, placed the animals after the contestants are through. When the papers are examined one man may have reversed first and second places, and the question is, how much should he be docked for so doing? Some adopt a fixed scale, deducting so many marks for each animal misplaced. This, it seems to me, is manifestly unfair, because in some classes it would be a very serious error to reverse first and second places, or second and third, as the case may be; but, in other classes, the best of judges might disagree, and it might be perfectly consistent to give two different placings practically equal marks. It seems to me that the only reasonable way is for the judge to go over the animals carefully and decide what he considers the best placing. Then he decides what would be the next best manner of placing them, and makes a note of what marks he will allow for such a placing. It may be nearly full marks, or he may make a considerable deduction, according to how close the animals are. Then he takes the next best placing, and decides what he will allow for that, and so on, until he has decided what marks he will allow for four or five of the most reliable methods of placing the animals. He is then in a position to mark the papers intelligently. Any contestant who did not hit one of the judge's placings would receive a very low mark, if, indeed, he received anything at all. This would need to be done for every class judged, and the deductions for wrong placing would vary in different classes according to the seriousness of the mistake.

From what has been said, it will be seen that the matter of conducting a judging contest entails a large amount of work. If it is worth doing, however, it should be done well, and I believe that, properly conducted judging contests will have a far-reaching influence in the improvement of live stock, and that they are worth many times the labor and money expended on them.

Hon. John Dryden: I want to impress three points that Prof. Day has made; first, do not let anyone forget the word "utility." He is right in saying that I have been an advocate of this principle for years. Pure-bred cattle are worth nothing unless they are useful. I would not give five cents a dozen for dairy cattle that will not give milk. A dairy animal may have all the colors, the fancy points, the right markings, and some particular kind of a tail that is exactly the thing, but all this is of no service if she will not produce an abundant supply of milk. It is utility we are after.

Another point is, do not forget that by interesting the young men in these judging classes and in the public discussion of the animals brought forward, you will gradually enable them to get hold of correct ideals regarding live stock. We want to establish one definite type and one idea to which everyone will turn attention. This is more important than helping the individual, because without that definite type in view we cannot hope to obtain uniform products in this country, which is necessary if we are to achieve great success in the world's markets.

Prof. Day says that these judging contests must come off on time; let everything come off on time. I obtained a fine lesson in this respect the first time I went to England and visited the Royal Show. There they have everything timed to the second, something that we have no conception of here. I remember standing in front of the gates at Windsor waiting for them to open at nine o'clock. The moment the clock struck, the doors opened, and that very moment the judges commenced their work. It was so all the way through; if their programme stated that a horse parade would take place at such an hour, you might rest assured that precisely at that time the gates would open and the horses would enter. Our people often say, "any time will do," and allow visitors to stand around and get tired and disgusted.

DISCUSSION BY EXPERT JUDGES.

J. M. Gardhouse, Weston: I entirely agree with what Professor Day has said. As to marking the competitors, it would perhaps be better to give 75 for placing and 25 for reasons. It is a great mistake not to give due weight for proper placing; if you cannot place the animals correctly, I do not see how you can give reasons. I think that every association ought to conduct a contest of this kind, and that it is one of the best possible means of educating the young farmers of this country and inducing them all to breed good live stock.

Mr. J. E. Brethour, Burford: My observation is that the very best results have followed this work wherever it has been undertaken. We can do more with the young men than with the older men who have already formed their opinions and prejudices. I wish to emphasize what Prof. Day said as to the necessity for conducting these tests on time. On one occasion at our fair we did not have a director appointed to look after this department definitely, and young men were allowed to stand around and waste the whole afternoon before the contest began. I heard some express regret that they had entered at all. They said: "We have wasted an entire afternoon which might have been used to good advantage in seeing the show." That taught us the lesson that another year we must have a specified time and live up to it.

Q.: How many classes do you have in these contests?

Mr. Brethour: We tried to do a little too much in this respect; we tried to conduct contests in judging beef cattle, sheep, and swine, and the result was the work was rushed to such an extent that justice was not done to any of it. We do not prepare a judging list, as suggested by Prof. Day, for marking the candidates. We conduct an oral examination of each candidate and mark him according to the results. We first ask competitors to place the animals, and then to give their reasons, and mark them as they go along. I think it would be well for the department to prepare proper score cards. If the work could be done by the department, it would save the fairs a great deal of trouble and expense, and the results would be uniform.

Edward Jeffs, Bond Head: As to the relative merits of placing and the giving of reasons in stock judging contests, there are lots of men who know what they know, and yet are unable to give their reasons. For instance, there is such a thing as character in an animal, but it is very hard to define it.

FIVE MINUTE ADDRESSES ON IMPROVEMENTS IN FAIR MANAGEMENT.

Rev. C. B. Clarke, Russell: There are four things that have assisted more than anything else, I think, in improving our agricultural society. First, comprehensive prize lists, that is to say, a prize list covering as many features as possible, without going too far in any one direction. We do not omit roots and grain (a western fair would also include fruit), which in many prize lists are neglected. Last year at this convention I moved that expert judges should be provided to judge fruit, grain and roots, and I hope yet to see the time when the Department will see its way to provide them. It is the expert judge system that has done more than anything else to build up our fair. I have been told by several delegates here to-day that their fairs have not yet tried the system. I advise them to begin at once. This matter has already been talked about a good deal in this association, but I feel that I must emphasize it.

It takes several expert judges to meet our requirements, and we should be glad if the men could work singly. Our judges this season delighted to work in twos. It is sometimes difficult for a judge to work alone, but if they will do so, much more work may be accomplished.

Another thing that has tended to help our society is friendly rivalry between counties. Our fair is one of a circuit. The "Ottawa Valley Journal" each year offers a banner for which these fairs may compete. We have won it on two occasions. Next year a fair building is to be offered, which will certainly be a great incentive.

As to the work of the directors, I hold that the directors of an agricultural society should work all the year round to make their fair a success; it is the only way to have a successful and progressive fair. Each director must take the responsibility right to himself, and go at it along with his other work. It is work that is perfectly proper and right, and I do not consider that I am stepping aside from my own line of duty when I undertake to assist in it. Points will occur to you, or people will make suggestions to you every day in the year, and it is a good plan to have a note-book and pencil and jot them down. One man wants this and another that; make a note of it, also of the suggestions that are made, and the ideas that occur to you, and after you have boiled it all down, you will get from it much that is of practical use and value.

W. E. Smallfield, Renfrew: For four years our fair was practically dead. Two years ago it was suggested that we should have Mr. Creelman there to decide whether it should die or live. He came, and warmed us up, and it was decided that the society should live and be useful. Mr. Creelman said at that time that he could see no reason why we should not have ten thousand people coming to our fair in two or three years.

The first thing we did was to appoint an advertising committee. Before that, our society spent $75 to $100 a year, half on the prize list and the balance in advertising in the local papers a few weeks before the fair, and in printing programmes. The committee was instructed to go into the matter systematically. We took the ground that we must first arouse the curiosity of the public, induce them to attend, and then give them a good fair, so as to insure their attendance in the future.

First, we took a list of thirteen nearest newspapers, and wrote them, asking if they would put in reading matter and advertising at a comparatively low rate, which they agreed to do. Then we undertook to supply them with material. For instance, it happened that we were painting our buildings with a pneumatic spray paint machine, so we wrote up a full account of this and supplied it to the papers. We wrote another article on our experimental plots, and articles on various other subjects as well.

Then we undertook something a little out of the ordinary: We got out a special paper called "The Renfrew Model Fair News," to specially advertise our show. Preparatory to doing so we sent out a circular letter to the merchants of the town, stating what we proposed to do, and asking for advertising. We received enough from that advertising to pay for the issue. The paper contained an article outlining the proposed improvements to the fair, and also reprints of the articles regarding the painting operations, experimental plots, our programme in full, a plan of the grounds, etc. In addition to this, we distributed four thousand hand bills and sold envelopes to the business men with an advertisement of the fair printed thereon. Altogether our advertising cost us $249, compared with $75 formerly, with the prize list included. What was the result? We did not get the ten thousand visitors, because it rained on the last day, but we got 7,000, and we are satisfied that if it had been fine we should have had the full ten thousand, and that the first year.

The time to start advertising is right after the previous fair, and the special advertising should begin two months before fair time. We think that if we keep our fair up to the standard, one new feature each year will be all that is required to maintain the interest. What we think of doing this year is to invite a couple of ladies from each of the surrounding townships to prepare an artistic exhibit of the agricultural and horticultural products of the district, giving each exhibit a ground space of, say, eight feet by six, and a wall space of eight feet by eight.

J. W. Sheppard, Cayuga: The matter of fair improvement is one of attention to detail. The newspaper men will certainly agree with the last speaker when he intimated that advertising pays; it certainly does, provided it is of the right kind. We are inclined to be too economical in this respect. Our society has a large number of posters printed announcing the fair and the dates. These are pasted up at every cross road, one facing each way, so as to be in full view of everyone who passes. I was somewhat alarmed when Mr. Creelman suggested that we should get a good secretary and make him

responsible for the show. I think the secretary has enough work to do in the performance of his regular duties, and that the directors are the ones who should be made responsible. Another point is that directors should not participate in the competition for prizes, as it arouses suspicion in the minds of other exhibitors when they see a director carrying off a prize.

The interests of a society could be advanced in some instances by having an official organizer, a man who would canvass for members and encourage the people to take an interest. I would not advise it for all, because some fairs make a magnificent success without any great effort, but others do not.

The expert judge system is something that the Department deserves great credit for. The judges we had at the fair this year were completely satisfactory to our people, and the greatest interest was taken in their work. It was a revelation to the whole country side, and I am sure the system will be continued by our society in the future. It should be extended to grain and roots, and even to the ladies' department. If this work is unwieldly for the Department to assume, I would recommend that they issue a list of competent judges in each department. A society could then select a judge, and make its own arrangement with him.

I am going to make a radical suggestion in connection with entry tickets for exhibitors. Dr. Bell stated that while it was not essential for the name of the exhibitor to appear, in his opinion it was of advantage and assistance to have it placed on the entry ticket. That, too, is my opinion. I have come to the conclusion that the best results are secured from placing the exhibitor's name on the ticket. It tends to prevent fraudulent practices, especially in the ladies' department, and it is a means of identification. It would also enable the visitor to ascertain who produced a given article, and he could go to that exhibitor and learn from him the methods pursued. It would also safeguard the carrying out of the rules and regulations of the society. A great many ladies follow a circuit of these shows, often putting on exhibition articles which the local ladies say they do not produce. If the exhibitor's name were on an article, she would have to go through the scrutiny of public opinion, and it would amount to a declaration that the article was produced according to the rules and regulations. The name of the exhibitor is not kept secret in the live stock departments, and why should it be in the case of other exhibits ? There is nothing to prevent an exhibitor of a horse from presenting his animal to the judge, but we have confidence that the judge will not be influenced thereby, and surely we are justified in placing the same confidence in the judges of other articles.

I was much impressed with what Mr. Race said last year—that he liked to have the people around him when judging fruit. I can see no good reason why an exhibitor of grain, roots, etc., should not be present when the judging is going on. If everyone was present, that in itself would be a safeguard against wrong doing, and the public should have an opportunity of being present at the judging.

Wm. McElroy, Richmond : In the County of Carleton, which, with Mr. G. N. Kidd, M.P.P., I have the honor to represent as a delegate at this convention, we have been endeavoring to make improvements in the management of our exhibition. During the past three years we have completely remodelled our prize list and revolutionized our programme, all of which, I would like to say, was primarily initiated and carried out through the persistent efforts and work of Mr. H. B. Cowan, our new Superintendent of Fairs.

In that time we have completely eliminated all circus performances as well as "trials of speed"—in the good old-fashioned sense—from our programme, although we have one of the fastest half-mile tracks in Canada on our grounds. This was not done from prejudice, but in what was to be considered for the best interests of our fair.

In 1902 we thoroughly revised our prize list, heading it with the pretentious title, "The Model Fair for Eastern Ontario," as we had adopted, so far as suited our local requirements, the model list prepared by a committee of this association, and issued by Mr. Creelman in March of that year. We also added some ideas suggested to us, and

introduced a number of educational features, including the work of school children in collections of plants, wild flowers, fruits, vegetables, etc., at the suggestion of Mr. F. W. Hodson, Canadian Live Stock Commissioner, to whom we are indebted for able help. There were also Model Kitchens, with cooking demonstrations for our lady friends.

To get our young men interested we had a series of athletic contests, all of which took well. Besides this, we gladly took advantage of securing the services of the expert judges of live stock, under the very liberal terms made by the Department of Agriculture. To the great appreciation of both exhibitors and spectators, the judges gave their reasons in making awards, as well as adding further valuable information.

Other interesting features, such as a milking contest (for milk and butter fat tests), instruction in sheep shearing, exhibits of desirable and undesirable type of bacon hogs, poultry fattening, etc., etc., were more or less patronized.

The result of all this hard work (for indeed there was a good deal of hard work about it) was that our fall fair all round turned out a great success. We had the largest attendance and greatest receipts in my knowledge of its history. Every person was delighted with the expert judges, and our fair, which had been gradually losing ground, turned the corner towards success, and we look forward to the future with high hopes. Of course, a few pessimists shook their wise heads, remarking: "It may do very well for one year, but it can't last. We must have the races." However, last year we continued on the lines of improvement of the year before, making but few changes in our prize list, and with the introduction of gymkhana contests as a new attraction. Again we had the benefit of the expert judges of live stock, who gave even better satisfaction than their predecessors of the year before. Our fair turned out a great success, both in attendance as well as exhibits. This year we propose to still add new features, and have prepared the ground for experimental plots.

John Farrell, Forest: I think that these matters have played an important part in the improvement of our fairs. In our society we believe in getting the best men possible on the Executive; we do not care whether a man is the highest man in the land or not, so long as he is a good worker, and will spend some of his time in the society's interest. When we have secured nine such men, we feel we have a board that will accomplish something, and we then place the whole thing in their hands. Each director is assigned his special duties, making one Chairman of the horse section, another of the cattle, and so on. Each is responsible for his particular department, and is expected to make it superior to what it has ever been in the past; he has nothing whatever to do with the rest of the fair.

In this way we create a certain rivalry between the directors. Each likes to do something superior to the others, and they will go out and canvass for exhibits. The fine arts and ladies' departments are conducted in the same way. I take a great interest in the ladies' department, because I feel that if you succeed in obtaining the interest of the ladies, you will gain the interest of the men as well. We endeavor to enlist the interest of everybody in the neighborhood, and in consequence we have a fair that we are not at all ashamed of.

When we took charge of the East Lambton fair it was $384 in debt. The first thing we did was to put up a first-class building. I induced the farmers in the neighborhood to take stock in the concern, and guaranteed them seven per cent. on their money. We knew that we could do it if we had everything first-class. We have had no trouble in paying our dividend, and leaving a surplus in the treasury. When people are passing through the district they all want to visit our fair, because they consider we are progressive

The principles I advocate for making the fair a success are these: Get the right kind of men for directors; have everything neat and beautiful about your fair; enlist the interest of the boys and girls, and secure expert judges. If these points are attended to, any fair can be made a success.

I cannot say too much to the credit of the expert judges who visited our fair. Last year we did not think that the judges sent us could be excelled. This year the Department sent us another set, and I should fear to make comparison; they were right up to date, and gave the best of satisfaction. We feel we are deeply indebted to the Department for what they have done for us in this respect.

W. F. Kidd, Simcoe: The day for exhibiting anything but pure-bred sires has passed at our fairs. Mongrel stallions and scrub bulls will not educate the people. The rules of every association should provide that none but registered stock will be accepted. Referring to Mr. Dryden's address, there is nothing to discuss; we shall have to fall in line, and have been trying to do so in the society to which I belong. If Mr. Dryden will give us a man capable of conducting these judging contests, I feel certain that our societies will fall into line still further.

Hon. John Dryden: I want to say a word regarding expert judges. I have asked the Legislature for only a small grant to carry on this work. It must be remembered that the Legislature already grants $80,000 to assist the work of agricultural societies, and I do not think it should be asked to do anything more in this direction. Expenses of this kind ought to be paid for out of your grant. I do not want to tell any Cabinet secrets, but my colleagues object to increasing these grants; they say: "You are always adding something on." I confess that we have added a great deal. I am asking this Province to spend $100,000 a year more on agriculture than it did ten or twelve years ago; but we are doing good work with it. I feel that the societies should try to use the money they get from the Province to the very best advantage.

Mr. D. Hughes Charles, Manager Merchants' Bank, Peterboro': Speaking of special attractions at fairs, I think it is to be regretted if our young men have to depend for their moral fibre on the instruction received at our fairs alone; it should be supplied in other ways. In my opinion, the horse racing feature is all right if properly conducted. The people like it; they will go to see a fair where racing events are provided, and these events under proper management may themselves be a means of education. In West Peterboro' the fair two years ago was in a broken-down condition, owing to inefficient management and the weakness in the prizes. Last year we had the most successful fair in the history of the riding. This was due to the fact that we provided not only clean racing events, but we gave prizes aggregating $5,000. In draught horses, for example, we paid $12, $8, and $4 for single animals, and $16, $12, and $8 to pairs. In cattle we were equally liberal, giving prizes of $8, $6, and $4 for pure-bred bulls. We introduced new features, even in the getting up of the prize list. Our list printed in pamphlet form and in colors, is as presentable as a magazine.

EXPERIMENTAL PLOTS IN FAIR GROUNDS.

By Prof. C. A. Zavitz, B.S.A., Agricultural College, Guelph, Ont.

When I appeared before this association two years ago and gave a talk on the "Value of Seed Fairs," I made the statement that, according to the reports of the Bureau of Industries, the market value of fourteen of our principal field crops for 1900 amounted to $114,758,761. By looking to a similar source for information, we now find that the market value of the same farm crops throughout Ontario in 1902 amounted to $146,421,171. This is very encouraging, and shows us that the value of farm crops in Ontario has now reached the large sum of about 150 million dollars per annum. As the market value of these crops increases from year to year, a still greater responsibility rests with those who are endeavoring to improve both the quantity and the quality of the farm crops throughout the Province.

There are now a number of agencies at work with this object in view, such as the experimental work at the Ontario Agricultural College, the co-operative work of the Experimental Union, the Farmers' Institutes, the public press, the seed fairs, and the

agricultural exhibitions. Of these agencies, the first four are already very well established. At the College about 2,000 plots are devoted annually to experiments with farm crops, including varieties, selection of seed, quantities of seed, dates of seeding, methods of preparing the land, methods of sowing the seed, methods of cultivating the crop, growing grains in mixtures, application of fertilizers, etc. The co-operative work in agriculture in connection with the Experimental Union is also increasing from year to year the number of experimenters in 1903 reaching 3,345. It goes without saying that the Farmers' Institutes and the public press are exerting a wonderful influence in furnishing valuable agricultural information to the farmers generally.

We have been greatly pleased to see the progress made in connection with the establishment of seed fairs within the past few years. A large number of these fairs have been started, much interest has been shown, and evidently good work has been accomplished. The improvement in connection with the agricultural fairs is still in its transition period, but I think it is quite generally recognized that several changes for the better have taken place very recently. Among these changes, the subject of experimental plots on the fair grounds occupies a prominent place.

It was only two years ago that the agricultural society of Ontario and Durham arranged to have experimental plots on their exhibition grounds at Whitby. The experiment seemed to meet with so much success that no less than five other exhibitions throughout the Province copied their example, and had plots with growing crops for the fall fairs in 1903. There were plots on the exhibition grounds at Renfrew, Owen Sound, Walkerton, Brantford, and Simcoe last year. The influence of this work has already gone beyond the limits of Ontario, as applications for seed have been received from Quebec and from the Maritime Provinces, and it is quite probable that this work will be increased among our own fairs from year to year. The Hon. Sydney Fisher, when visiting the agricultural fair at Whitby last autumn, expressed himself as being greatly pleased with the experimental plots. At the public meeting held in the evening he stated that he considered the experimental plots one of the greatest features at the fair, and that he intended to introduce that feature of the work in connection with his own fair in Quebec in 1904.

The experimental plots on the various exhibition grounds in 1903 varied in size and in number according to the amount of available land of proper quality which could be procured on the exhibition grounds. I have represented on the accompanying chart a map showing the arrangement of the plots and the names of the varieties of farm crops exactly as they were placed on the exhibition grounds at Simcoe, Norfolk County, last year.

I have selected the plot work of Simcoe simply because the arrangement was somewhat different from that at Whitby in 1902, and at the other places in 1903. The arrangement of the plots at Whitby two years ago is shown on page 99 of the annual report of the Ontario Fairs and Exhibitions for the year 1902. Allow me to draw your attention to the varieties grown on the exhibition grounds at Simcoe, from which you will see that there were some excellent object lessons for the farmers visiting the exhibition.

Millet. The Hungarian Grass, which is well known in many parts of Ontario, was grown between the Japanese Barnyard and the Japanese Panicle varieties. This formed an admirable object lesson, as each of these varieties produced a very heavy crop, which was tall and upright in growth, and contained an abundance of leaf; while the Hungarian Grass was short, weak in the straw, and produced an insignificant crop.

Sorghum. The Millo Maize and the Kaffir Corn, regarding which we hear so much occasionally in the public press, showed very poor growth in comparison with the Early Amber Sugar Cane, which is grown quite successfully in some sections of Ontario as a fodder crop for farm stock.

Corn. The Mastadon Dent, Wisconsin Earliest White Dent, Compton's Early, and North Star Yellow Dent showed different degrees of earliness and different quantities and character of growth, showing the North Star Yellow Dent to be a variety which will likely give good results as a grain crop, and the Wisconsin Earliest White Dent as an excellent variety for the silo in Norfolk County.

Clovers. Much interest was taken in comparing the comparative merits of Common Red, Mammoth Red, and Alsike clover, Sainfoin and Lucerne. The Lucerne showed an exceptionally good growth for the first year, and seemed to indicate that this crop would likely thrive well in the vicinity of Simcoe.

Grasses. Although it was the first year after the grasses were sown, and the crops were not as interesting as they will likely be in another year, the abundant and early growth of the Orchard Grass, Tall Fescue, and Tall Oat were quite marked in comparison with the growth of Timothy and Awnless Brome.

Roots. The root crops were represented by leading varieties of parsnips, carrots, sugar beets, mangels, fall turnips, Swedish turnips, and kohl rabi. Great interest was taken in comparing the two varieties of sugar beets, namely, the Kleinwanzlebener, which is grown largely as a food for stock. The Yellow Leviathan mangel, which has taken the lead of all the varieties of mangels grown at the College for the past five years, showed exceptionally well on the Simcoe soil. The Early White Vienna Kohl Rabi, which is grown in the old country as a table vegetable and as a food for stock, created considerable interest, as it is not grown generally throughout Ontario, except in some gardens. The turnips, as a rule, did not make a very satisfactory growth on the Simcoe plots.

Vetches. The Hairy Vetches, in comparison with the Common Vetches, made an admirable growth, and showed some of the characteristics of the former variety, which is making it prominent in some places as a cover crop, or to be used as a food for stock, either as green fodder or as pasture.

Bug-proof Peas. The growth of the Grass peas was quite inferior, while that of the Egyptian and Cow peas was only medium.

Soy Beans. Another exceedingly interesting object lesson was that in which the Medium Green and Early Yellow varieties of Soy beans were grown side by side, the Medium Green showing some of the characteristics which specially adapt it for mixing with corn when filling the silo in order to improve the quality of the silage ; and the Early Yellow variety as a producer of grain of high quality.

Rape. The growth of the Dwarf Essex variety seemed to indicate that the rape does not do quite as well at Simcoe as it does in some other parts of Canada. It is possible, however, that the season had some influence in causing a light crop in 1903.

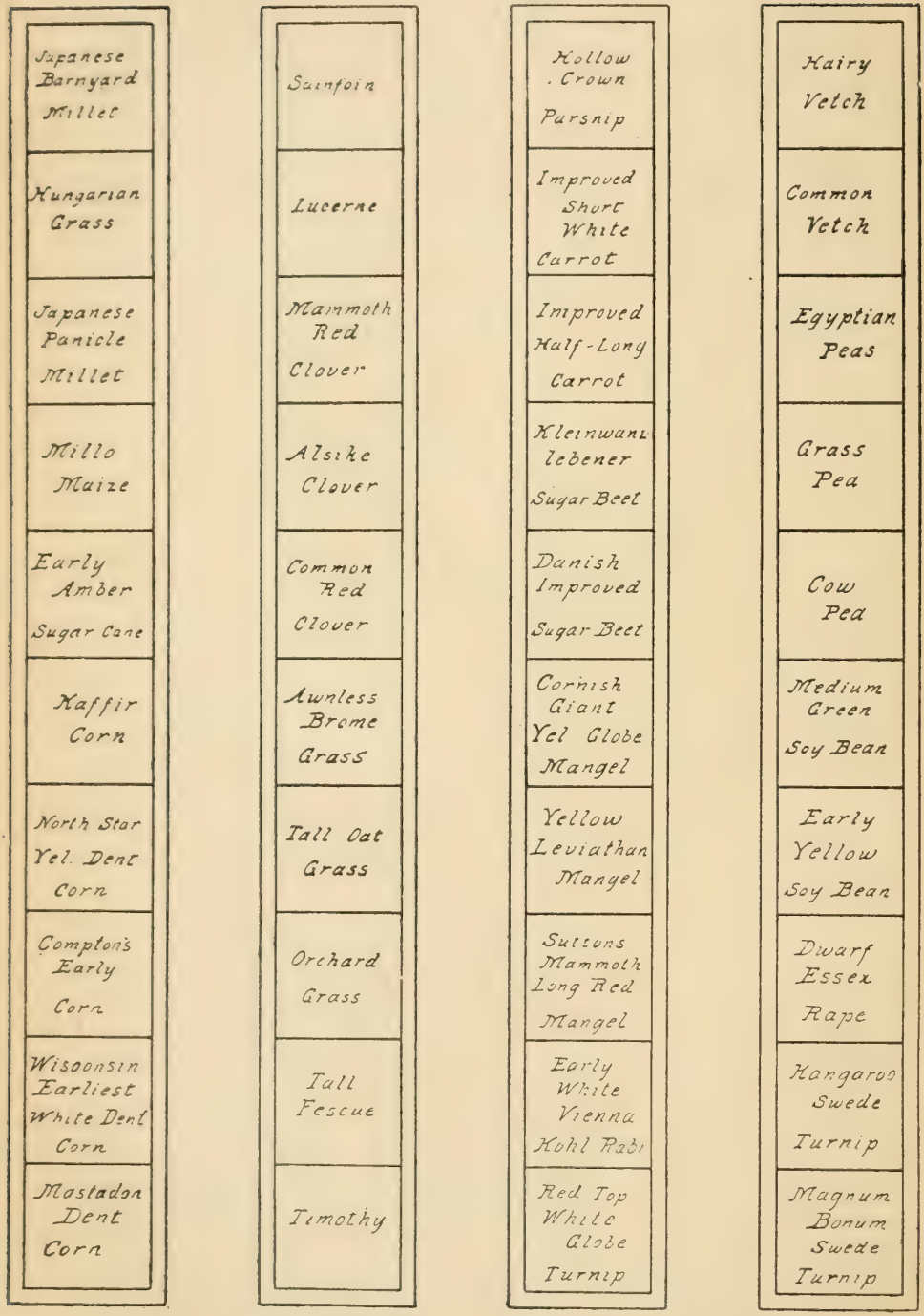
Besides the plots here represented, two other plots were sown in the middle of the summer with barley and with wild mustard. Just previous to the fall fair, one of the plots was sprayed with a bluestone solution, while the other was left unsprayed. This formed an excellent object lesson in showing the people that by spraying with bluestone solution of the proper strength the mustard could be killed and the barley left uninjured.

The arrangements for the experimental plots at exhibitions were made by the various societies with the Superintendent of Fairs for Ontario. The officers of each society elected one of their number to be responsible for this branch of the exhibition work, and he in turn secured the best man available to do the work under his care. The Experimental Department of the Agricultural College furnished the seed, and gave instructions for the work, free of charge. A college man also visited the different exhibitions in the spring, and gave assistance in getting the work started. A representative from the college was also present during the time of each fair where the plots were located, and gave information to the farmers regarding the relative merits of the different crops growing in the plots. The expense involved by those who went to the exhibitions to give assistance was paid by the Superintendent of Fairs. If this work is continued, the writer would recommend that provision be made by which a man might visit the plots on each of the fair grounds at least three or four times, instead of only twice.

It might be said that but few of the grain crops can be grown on exhibition plots to be exhibited at the time of the fall fairs, owing to the lateness of the season. While this is true, it should be remembered that perhaps the greatest interest in Ontario is

EXHIBITION PLOTS — 1903.

Simcoe Ontario.



being taken at the present time in such crops as can be grown to good advantage and exhibited at the time of the fall fairs. The reports of the Bureau of Industries show that within the past five years there has been a considerable increase in mangels, corn, barley, oats, hay, and clover. The tendency in Ontario seems to be to increase the area devoted to such crops as mangels, corn, pasture, hay, and various fodder crops. Is it not well that such is the case? The growing of fodder crops is closely associated with the maintenance of the fertility of the soil. As the result of a large amount of investigation along this line in the United States, I am able to quote from the Year Book issued by the United States Department of Agriculture for 1902 as follows: "It is generally conceded that where the major part of the farm is devoted to the production of forage crops that are consumed on the farm, the soil is growing richer; while in those regions where such crops are not grown, and where commercial fertilizers are practically the sole reliance, the productivity of the soil has been greatly lessened." Hence the importance of giving an opportunity to a large number of the farmers of Ontario to see for themselves the comparative merits of various kinds of crops when grown side by side under similar conditions.

As the plot work on exhibition grounds becomes more thoroughly established, there is no reason why object lessons in showing the influence of selections of seed, dates of seeding, methods of cultivation, application of fertilizers, etc., cannot be furnished on fair grounds as well as those with varieties of farm crops, and in the destruction of wild mustard.

I am of the opinion that if the exhibition authorities take hold of this question in a thoroughly businesslike way, they can make their fairs exert a great influence on the farm crops of Ontario. Would it be beyond the limit to say that the fall fairs of Ontario can be made to exert a greater influence on Ontario's crops in the next five years than they have exerted within the past quarter of a century?

A Delegate: I would suggest that the time of visiting the experimental plots during the season should be advertised, so that any in the vicinity who were interested might attend and obtain useful instruction.

Prof. Zavitz: That is a very good suggestion.

A Delegate: I cannot get anyone interested in these experimental plots in our district, but I think if I had some definite idea of the cost it might enable me to do so.

Mr. Kidd: The cost of the plot at the Simcoe fair the first year, including fencing, labor, and manure, etc., was $100, and the fence was as good as it could be. The plots are on the fair grounds.

Mr. Creelman: The Whitby plots cost $35 the second year for everything. Some of the grasses and clovers will remain from year to year, and do not require re-seeding. Some criticism was made the first year as to the grasses and clovers not looking well; the reason was that they had been planted only that spring; they will appear to much better advantage the second year.

ADDRESS.

By C. C. James, Deputy Minister of Agriculture.

In 1868 the Legislature set apart $64,000 for agricultural purposes. Of that amount $34,000 was given to agricultural societies, $10,000 to the Provincial fair, and $350 to the Ontario Fruit Growers' Association. We may say, therefore, that at that time the agricultural societies represented the whole field of agriculture; whatever was being done was being done by these societies, and there was little or nothing outside of their scope. This year the appropriations for agriculture, apart from the Agricultural College, amount so far to $184,985. Of this amount, the agricultural societies recieve $76,000, leaving $108,000 for other purposes. This means that an enormous amount of work has

been undertaken which does not come within the scope of agricultural societies. That fact suggests a very interesting line of discussion, if we had time to enter upon it; I simply draw attention to it as worthy of careful consideration.

This $108,000 is given as an appropriation for carrying on certain lines of work which the agricultural societies either did not or would not do, which must certainly be considered as of very great importance to the agricultural interests of the Province. This work has devolved on the Department of Agriculture, and the question arises whether the agricultural societies have fallen short in their duty, and have neglected the opportunities they ought to have embraced for work that properly came within their sphere.

As I have stated, the agricultural societies are now in receipt of a grant of $75,000. This is the largest vote taken for any specific purpose in connection with agriculture. I remember that four or five years ago when considerable expansion took place in the agricultural work, and we were looking around for funds, the suggestion came from some quarters that this $75,000 might be more profitably employed by being utilized for this work. I do not think the societies know how close they came to losing a portion of their vote at that time. It was about that time that new life seemed to enter into the societies, and to that, I suppose, may be attributed the fact that they are still receiving that grant intact. I may say, however, that suggestions are still coming in from certain quarters that certain of the agricultural societies do not make the best use of their funds, and until they do it it is likely that suggestions will continue to be made that some of the money should be used for other purposes.

In my address to-day, I desire to place three propositions before you for consideration. The first is this: That the importance of a society is not measured by the number of its members, and whether its show is "open to the world" or not. In discussing this matter with the officers and directors of societies, I find that a great many are inclined to base the importance of their society on their membership, and also to think that the wider open they throw their doors the greater will be their importance. I regard that as a serious mistake. A large membership is to be desired, but it does not necessarily follow that the society with the largest membership is doing the best work, nor is it the main object that a society should have before it. I have run across officers of societies whose sole aim seemed to be to get members—if they could only turn in a swollen membership list to the Department, they seemed to think they were helping on their society.

The next point I will mention, and one that is a rider to my first suggestion, is this: that the value of the society does not necessarily depend on the wideness of its work, or, in other words, on how wide open it may throw its prize list.

I think that a great many of our township societies especially are making a serious mistake in advertising themselves as "open to the world." The original purpose in forming these township societies was to benefit those living in the township which the society represented, not to benefit the next township or the next county, but that particular township, and if a township society confines its efforts to benefiting the agriculture of that township, it is accomplishing its work. We prefer to see reports coming in of limited work, where that work is devoted to the township, than to see the announcement that the fair is "open to the world." If anything can be done to stop the professional prize taker by limiting township societies to the township in which they are located, I think a very important step will have been taken towards improving these societies.

The next point I shall draw attention to, as another rider to the point first mentioned, is that the success of the show should not be measured by the size of the crowd in attendance. Sometimes, when the question is asked, Was such and such a show a success? the answer is, "Why, it must have been; look at the big crowd they had." Or, we frequently hear the statement, "Our show last year was not a great success, because we did not have as large a crowd as the year before." I wish to emphasize the statement that the gate receipts are no criterion of the value of the show; in fact,

the opposite is frequently the case. Therefore, while we should not estimate the value of a society by the number of its members, it is equally unwise to estimate the value of a show by the amount of the gate receipts.

"But," you will say, "if we do not get a crowd, we cannot make the show pay. If you go over the financial statement you will see why it is necessary to get a big crowd." That is, there are extraordinary expenditures that must be provided for, expenditures which lie to a large extent outside the old established line of fair work. It is a question whether in such instances the fair would not be a greater success if these were cut off altogether.

The answer may also be made that these large crowds are necessary in order that entertainment may be provided for the visitors, and that surely the farmers of this country are entitled to a few days in the year when they can have a good time. I suppose that the Ontario farmer is, all things considered, as hard a worker as any farmer anywhere in the world. Mr. A. G. Bradley, who lived on the farms of Ontario for some years, has written a book entitled "Canada in the Twentieth Century." The view he expresses in that work is that the Canadian farmer is a hard-worked man: has always been a hard-worked man; that he works twice as hard as the English farmer, and that if the English farmer had worked as hard and lived as thriftily as the Ontario farmer, there would be little need to-day of bringing foodstuffs into England from other countries. One point that he lays great stress on is that the Ontario farmer works so hard that his family have little time for enjoyment. The point is, therefore, open for consideration as to how we can provide that enjoyment and pleasure to which he is certainly entitled. But are we right in seeking to give him a year's enjoyment in one or two days at the fair, and sacrifice other important features of an agricultural exhibition in order to do so? This is, apart from the fact that the amusements provided are not always of the most enjoyable and elevating kind; and that while they may be more or less harmless to the mature man, they are certainly of poor educational value to the farmer's children, and may do them positive injury from the point of view of morals.

This question of how to provide the farmer with entertainment seems to be rapidly pushing itself to the front, and we shall have to consider it in a much more serious way in the near future than we have done in the past. Five or six years from now it will be seen that it is a matter of far greater import than appears at the present time. The farmers are getting into a much better condition financially; the result of their labors has put them in a condition that is second to no other class in the community, and we shall very soon have to look round to see how we can provide that recreation to which they are entitled. But, in doing so, we must be exceedingly careful not to run to excess, and to provide that enjoyment along legitimate lines. I do not know whether this question strikes you as being of as much importance as it does me, but this question of enjoying life—of truly enjoying life—is a matter of serious consequence. Of what use is it to a man to have an income of $1,000 or $2,000 a year if, while he is making it, he gets nothing out of life except the stimulus that comes from the work itself? It would be better for him to work less and get some pleasure out of life, and be able to give more pleasure to those around him. If we can assist the farmer in the production of his crops, and help him to make his living in a surer and easier way than he has been doing before, we shall be giving him more time and opportunity for enjoyment, and enabling him to get more out of life. It seems to me that it is a degradation of the farmer's position for anyone to say that he must work all the year round and have just two days in the year—the days of the fair—for his recreation. When a man is confined to two days in the year for his enjoyment, he is almost sure to go to excess.

The day is passing when the farmer thought it necessary, in order to make a success of his business, to get up before daylight and work till after nightfall. The change in this respect is most marked, and if we can do anything to hasten it, I think we ought to do it; but I do not think we are doing it by reserving two days in the fall, and saying in effect that the farmer must confine his enjoyment in those days. An Agricultural

society will never be able to supply the farmer with the enjoyment he needs, and, therefore, I think we should start off with the idea that the fair is not the place where his recreation should be provided.

The third point I wish to mention is this: In our endeavors to improve the agricultural society system, we are apt to make the mistake of going too far along certain lines of reform. There are amusements that are attractive and improving, and we should not sacrifice these. The suggestion of uniformity of work has been frequently made; there is a possibility of introducing too much uniformity among our exhibitions; of patterning them all along one line. The experimental plots, for instance, may be well adapted to certain fairs, but if you tried to introduce them on all the fair grounds of the Province, we should be making a serious mistake. We must go about this matter rationally, and put a series of plots where they are needed and will do good. You may adopt certain features from the Simcoe Fair, but there may be others which it would not be advisable for you to adopt because your conditions are different. These matters must be approached with care and consideration.

If I were to take fifty or sixty prize lists and place them on the table and ask some one to tell me, without looking at the cover, what particular district each one represented, I doubt very much whether it could be done. The reply would be, "Why, they are all on the same plan; there is nothing distinctive about them." Is it rational that the prize list that represents a district that is largely devoted to dairying should be the same as one that represents a stock raising section or a fruit growing section? They do these things better than we do in some of the older countries of Europe, particularly in France. France is wonderfully varied in its agricultural methods. There are certain districts where sheep raising and nothing else supports the people; other districts that are devoted to the grape-growing and wine-producing industry, and so on, with many other specialties.

What has the Government of France done in this connection? Has it provided the same work and the same line of instruction in all these sections? Not at all. Where sheep-breeding is the great industry, you will find everything done to encourage that industry; when you go into a section where wine-making is the great industry, everything is done there for the encouragement of that industry. It seems to me that the time has arrived in this Province when we should begin to specialize a little more. We shall have to do it if we are to hold our own. We can no longer make a living out of growing wheat.

We have made a success during the last six or seven years simply by developing certain specialties in certain sections. In some sections we find that beef will pay the best; in others the feeding of hogs is proving remunerative; in others cheesemaking is found exceedingly profitable, and you will accordingly find that during recent years the greatest success has been made by particularly developing special lines. We have had this brought out clearly in the work of the farmers' institute. It is not the general institute that is producing the best results; the best success is attained by going into a section and holding a fruit institute, or a dairy institute, or an institute where live stock is discussed; an institute where bacon is talked, and nothing else. Specializing has been found exceedingly profitable, and I think that our agricultural societies should recognize that, and through their prize lists seek to adapt themselves to their particular locality.

While it is intended that an agricultural society shall cover the whole field of agriculture, yet it seems to me that when a society has under its care a district devoted say, to dairying, that industry should receive particular attention. I stated that we have found it necessary within the last ten or fifteen years to go outside of the work of the agricultural society and spend $100,000 in doing work that formerly was performed to a greater or less extent by these societies, which work they might have continued to do. In a fruit growing section, would it not be in accordance with the best interests of that section that the agricultural society should bend its energies, not entirely, but almost entirely, to the development of the fruit industry? There are some townships in the

fruit districts that have gone largely into the growing of vegetables for canning purposes—where the people grow tomatoes, peas, and corn for canning, and have become well-to-do as a result of it. It seems to me that the agricultural society in such a district, while it should devote some attention to other lines of work, would be looking to the best interests of the section if it gave particular attention to the development and encouragement of the particular lines out of which people were making the most money. It is possible to make our societies too uniform, and thereby destroy their usefulness. We ought, so far as possible, to adapt ourselves to the peculiarities of the section in which we are working.

I will leave with you the suggestions I have made ; I do not suppose they are new ; it is often necessary to keep repeating a thing in order to get the people to grasp it. It takes a long time to get the farmer started on these new lines, possibly because they have grown to mature years before these changes were inaugurated, and had become used to old methods. The result is that they do not jump at things as quickly nor grasp things as readily as they would have done had they been brought before them earlier in life ; but when the Ontario farmer gets an idea into his head, it will stay there, and he will work it out with better hopes of success than will the farmers of any other country that I know of, or than any other class in the community.

Lieut.-Col. J. A. McGillivray : Mr. James suggested restricting the competition for prizes to the township in which a society is organized ; would you make that apply also to county societies ?

Mr. James : I would in some particulars. I would as regards field crops ; I would not allow roots, etc., to come in from the outside and compete with products grown in the section. With live stock it is somewhat different ; it is a question whether it is not advisable to allow breeders from outside the district to exhibit their stock so that it may be used for purposes of comparison ; but I think that the tendency should be to make the exhibits the product of the district in which the fair is held.

Col. McGillivray : That would be in harmony with my own view. As to extra holidays for the farmer, I am sure Mr. James will agree with me that it would be a calamity if the farmers of this country became the leisure class that they are in Australia, where they have a holiday every week for horse racing, etc. I do not think we should have any holiday for the farmer that is not open to all classes.

Mr. McNeill : You would reverse that, too, would you not, and say that no class should have any enjoyment that is not open to the farmer ?

Col. McGillivray : Exactly. I see the necessity for it, as Mr. James does, and I hoped he would suggest some means by which it could be obtained, keeping away from the excesses of Australia and England, where the farmer is a gentleman, so far as leisure is concerned. Our farmers are not working as hard to-day, however, as they did when we were boys ; or at least the hired class is not ; but there is no doubt that the farmer should have a day of enjoyment occasionally ; but it should not take the form of the frivolous enjoyment supplied by many of our fairs. The Toronto Industrial has been blamed for this in the past, but I assure you that it is the desire of the board to have the cordial support of every fair organization in the Province, and if we are doing anything that is not in the interest of the local organization, we will cut it off. I think you will all agree, however, that our programme is very much improved in this respect of late years. If Mr. James could bring up some scheme whereby the farmers could get this enjoyment elsewhere than at the fairs, I am sure we should all be very much pleased.

I agree with him when he says that in a beef section you should not offer so many prizes for dairy breeds as for beef breeds, but that you should favor the specialties of the district represented.

A Delegate : What would you do with professional prize takers in ladies' work ? They send in these exhibits to our fair by express from forty, fifty, and a hundred miles away, and ask to have them placed on exhibition, the prize money remitted, and the goods repacked and returned. What are we to do in a case like that ?

Mr. James: What was the township society provided for? It was provided in order to assist the people living in that township. The same thing applies to a riding society. If that is so, why should you admit exhibitors from other townships? If it is to help the people of that township, I would not let an exhibitor in from the outside unless he is going to bring in something that will be an object lesson to your people. The same thing applies in the fine arts and ladies' work department. Unless by bringing in exhibits from the outside you can stimulate and improve the home products, I would say, keep them out. In nine cases out of ten I would restrict the members of township societies to persons living in that township, and the same thing applies to district societies. When you reach the importance of a Western Fair, or a Midland Fair, or the Dominion Industrial Exhibition, then, perhaps, you can afford to throw the thing open to the world.

A Delegate: We experienced the difficulties referred to by Mr. James and other speakers, and decided to restrict the membership to the district. The result was that last year we held the most successful exhibition ever held.

Mr. Charles: I do not think it wise to restrict exhibits of live stock to the district; we want to improve the breeds of live stock of all kinds in this country. There has been far too much laxity in regard to the use of sires. I hold strongly to the opinion, and have done so for many years, that on no account should a stallion be allowed to stand for service unless he is licensed by the Government. Why do I as a bank manager take any interest in these fall shows? Simply because I know that the better stock the farmer has the better off he will be, and, therefore, the better off will the bankers be. As to the farmer being hard worked, I do not think he works half as hard as you think he does. A bank manager sees behind the scenes a good deal; and I can assure you that there are a great many business and professional men who work hard on six days of the week and worry all Sunday to make ends meet. It is true that the farmer works hard, but to-day he has all the advantages of improved machinery, and he uses his brains more than he used to do. I think that the Ontario farmer is to be envied by nine-tenths of the business and professional men in this country.

A Delegate, Gore Bay: I think that Mr. James' address contains some excellent points, and that his suggestion is a good one to limit competition in grain, roots, and fancy work to the district in which it is produced. But I do not take that view in regard to cattle. I live at Gore Bay, Manitoulin Island, and am a breeder of Shorthorns. My market is limited, and last year I wrote to the different fair organizations on the north shore and asked for the privilege of exhibiting my cattle. They all gave me a hearty invitation to do so. The result was that my cattle were a great attraction, and were an object lesson to the people of that district. The Mayor of the American "Soo" gave me an invitation to take my cattle over there; I did so, and had a month's free advertising in all the papers of the neighborhood. My exhibit was of great benefit to the people of these new districts, and was something that many of them had not seen previously.

Mr. James: I stated that the matter of live stock would need to be dealt with according to the merits of each individual case. It is true that the farmers are to-day in a better condition than any other class of the community in this country, and in that connection I would call attention to the fact that it took fifteen or twenty years to bring about this state of affairs. Organizations such as this—which are now being lauded up so much—were, during the major portion of that period, working along without much encouragement, but it was then that foundations were laid for present prosperity. Therefore, I say that we must be exceedingly careful not to rest on our oars, and be content with what has been done, thinking that bad times cannot return. Just as soon as the farmers reach a self-satisfied condition, they will find bad times coming on their heels once more. The fact that we are experiencing good times now should make us all the more determined to bestir ourselves and put forth every effort to retain them. We can do so only by continuing the work we have found so successful in bringing about present conditions.

As to how the farmers shall receive the recreation to which they are justly entitled, this is a difficult and serious question, and the problem will probably work itself out along some line that we do not foresee at the present time. The easier we make the farmers' work, and the more certain he is of making a good living from his farm, the shorter will be his hours, and the more time he will have for reading and recreation. The point I wish to make is that the farmer ought not to be restricted to two days in the year for his pleasure. Too many of us look upon the fair as the only time in the year when the farmer enjoys himself. Many times when presenting the view that the farmers' work, and the more certain he is of making a good living from his farm, with the reply that this is the only time the farmer has any amusement; why should you deprive him of it? I maintain that this is a serious state of affairs if it is true; that the farmer ought to get his enjoyment all the year round by having leisure for reading and intercourse with his neighbors, and for travelling occasionally as other classes in the community do; and that the agricultural society was never intended to provide him with his amusement, but, on the other hand, it was intended to help him in his work and to assist him in gaining his livelihood.

A Delegate: It is a mistake to suppose that the farmers' only enjoyment is obtained at the fair. Farmers do enjoy themselves, probably just as much in their way as do other classes in the community.

A Delegate: When we opened our fair to the surrounding townships, finer stock came in from the outside than we could produce; but it served as an impetus to our farmers, and resulted in our live stock being improved. I think it would be a retrograde movement for our societies to close their doors to outsiders, especially as regards live stock. We will not take ladies' work, however, unless the exhibitors come personally and supervise putting it up. I cannot agree with Mr. James that a small membership is to be preferred to a large membership in any case, or that the membership should be restricted to the township. Every fair secretary likes to see a large crowd at the fair. If Mr. James had ever run an exhibition, I think he would be just as anxious for a large membership as the rest of us.

Mr. James: My father was secretary of an agricultural society for thirty years, and I assisted him for eight or ten years, so that I know something about it.

A Delegate: Where I live we are surrounded by a number of towns and cities, and a great many of the townspeople like to patronize our fair, and some like to become members, and I do not think it would be right to exclude them. If you have a large membership, it means a popular fair; it also creates enthusiasm, and if you have not that spirit aroused, the fair will be a failure. I should like to know how to cope with the lady professional exhibitor.

A Delegate: There seems to be a great dread of the lady professional exhibitor. We think that the ladies in our section have intelligence and ability enough to hold their own against all comers.

PRACTICAL TALK AND DEMONSTRATION ON POULTRY CULTURE.

By W. R. Graham, O.A.C., Guelph.

The poultry industry has made rapid strides during the last ten years, and is now one of the important industries of the farm. The amount of poultry killed and sold has nearly doubled during the last ten years, to say nothing of the increased revenue from the production and sale of eggs. It is gratifying to note the increase in the prices paid for dressed poultry and eggs, and, further, that more of these are going into home consumption. During the last year prices of well fattened chickens in Montreal were almost equal to those in Liverpool. The difference in price in many instances was not enough to warrant exporting.

In looking over the prize list of many fairs, one is impressed with the idea that there has not been much progress of late years. There are apparently the same prizes

as there were twenty years ago. This, of course, does not apply to all fairs, yet it does to many. The birds are still shown in pairs. Do the directors ever stop to think what they ask the judge to do? The prize list reads, "For the best pair." The judge examines the birds: A shows a good cock, but a hen that is not anywhere near his equal; in fact, she may not be pure bred. B shows a good hen, but a poor cock. How can any judge satisfy himself under such circumstances? The result is the judge is dissatisfied, the breeder is also storming, and the general public criticize. Why cannot the societies divide the prize list, and allow a stated prize for the best cock, hen, cockerel, and pullet, and then the public and the exhibitor know which are the best specimens, and the judge can leave the show with a clear conscience? It is not absolutely necessary to add more money to the lists, but in many cases I think a little more money would bring a much better exhibit. At some shows where the prize lists are small and the birds shown in pairs, the exhibits are very small and inferior, and there is not much encouragement for parties to show good stock.

Could not a prize be offered for the best dozen fattened chickens shown alive? This is being done at the shows in the vicinity of Ottawa, and I understand has given excellent satisfaction, and I recently heard from a dealer that the chickens in that vicinity are improving very rapidly.

A class might also be added for the best shaped cock or cockerel, from a market standpoint, and the same for hen or pullet, or, what might be better, have a class for a pen of utility birds, to consist of one male and three females.

Classes for the best basket of brown eggs and for the best basket of white eggs would stimulate the production of larger, cleaner and more uniform eggs.

The prizes should be substantial, so as to give some encouragement to an exhibitor to fit and bring the exhibit out in the best possible condition. If possible, have the judge give reasons for his awards. When a judge goes to a show, tacks up the tickets and takes the first train out of town, this does little to educate the exhibitors. Get the exhibits in early, get them judged early, and then make the judge stay late, and stay by the coops, so that anyone and every one can get all the information possible from him. This may cost a little more, but it will be money well expended on educational work.

There is also room for improvement in the way of cooping. Where the association has sufficient funds, it certainly makes the work of the judge much more satisfactory if the birds are all cooped in pens of equal size. It also adds much to the attractiveness of the exhibit.

Much might be done along the educational line by giving demonstrations in killing, plucking, and packing for shipment. This might be accompanied with short talks on the feeding and management of fowls. Large plans could be placed on the wall, and the man in charge could explain the essential points of a poultry house, and at the same time give detailed information as to its construction and so forth.

ADDRESS.

By H. B. Cowan, Superintendent of Agricultural Societies.

The President then introduced Mr. H. B. Cowan, the newly appointed Superintendent, who was heartily applauded. He spoke as follows:

I did not expect quite so hearty a reception, seeing that at present I am practically untried, but I thank you sincerely for it. I realize that I have a difficult and responsible task ahead of me, especially in coming after such a man as the late Superintendent, Mr. Creelman, who is known from one end of the Province to the other, and everywhere I have been I have found he is favorably known. He has a thorough grasp of this whole question, and I realize that it is going to be difficult to fill his shoes. I should have hesitated greatly before accepting it had I not known that I should still have him to

fall back on for assistance, and that I should have more time to devote to the work than he had, owing to the multiplicity of his duties.

It may be in order for me to say something regarding plans for the future. I have not had an opportunity as yet of talking matters over with the Ministers, or with anyone connected with the Department, but for several years I have felt there are many things that can be done to improve our fairs. When connected with newspaper work in Eastern Ontario I had to attend a number of fairs. One point that struck me forcibly was that each society seemed to be entirely independent of other societies. These societies were all contending with the same difficulties, but never got together to try to devise some means of solving them. It was this fact that led me to speak to Mr. F. W. Hodson about it. The result was the formation in Eastern Ontario of the first circuit, consisting of eleven fairs. The paper with which I was connected offered a banner for the best fair in the circuit. Athletic sports for the county championships were also inaugurated, the winners in the various groups of contestants meeting finally at Ottawa to decide the larger championships in the manner I have described to this Association on previous occasions. These competitions demonstrated that it is possible for fairs to co-operate and assist one another. The idea is capable of very much greater development.

The progress made since these first steps towards co-operation has been most encouraging, largely through the efforts of this Association, assisted by its Superintendent, Mr. Creelman. The number of fairs arranged in circuits is now 152, and two model fairs have been held with marked success. The result has been to change, from one end of the Province to the other, the sentiment surrounding our fairs. The belief is now becoming general that they should be made as educational as possible. This is one of the most important results of the work so far accomplished, a result which is not confined to Ontario, but has extended throughout Canada and also into the United States.

It is a pleasure to me to know, since residing in the United States, that we not only have the best Farmers' Institute system, but that already our fair system is the best to be found anywhere. Few fairs in the United States are doing work that is really beneficial. In the State of Maine they started out with societies that were purely agricultural, but gradually drifted into horse trotting. Now a large proportion of the societies are horse trotting societies pure and simple, and give no prizes for agricultural products. This is what we were coming to in Canada. In the other New England States it is not much better. About a month ago the Connecticut Board of Agriculture asked me to speak on the subject of Fair Improvement. I described the system in Ontario, and told them of the work we are doing. After I had concluded a number of farmers got up all through the hall and denounced their own fair system from beginning to end. Since seeing this I have realized the good that was done in the Province of Ontario by Mr. Hodson taking the fearless stand he did a few years ago as to the necessity for improving our methods and making the fairs more educational in their character.

One of the most encouraging things in connection with our model fairs is the fact that they have demonstrated that it is possible to conduct fairs on educational lines and yet interest the people and secure a good attendance. While I am on this subject I might say that there is one difficulty which occurred to me, and it is this: At these model fairs we have been able to avail ourselves of the best talent, securing men like Profs. Day, Zavitz, Graham, and others. These men have in themselves been a great drawing card, but we cannot secure their services for all our fairs, and the question arises as to how we are to supply their places. I do not think the difficulty is insurmountable. When a Farmers' Institute system was first started, Dr. Mills and a few professors from the Agricultural College were almost the only speakers available. It was soon found necessary to develop speakers. This was done, and to-day the supply is equal to the demand. It should be possible to train men for fair work in the same way.

What constitutes a good fair? Many of the societies in the past have had erroneous ideas on this point. Mr. James drew attention to the fact that a big crowd and big gate receipts did not necessarily mean a successful fair, although both are important. The chief object should be to benefit the community rather than to conduct a fair that is a financial success and nothing more.

The agricultural societies are receiving an annual grant of $76,000 from the Provincial funds, and there is more or less dissatisfaction at the way that money is being spent. I am satisfied that if these societies from one end of the Province to the other were doing good work, and our people realized the fact, there would be no hesitation in distributing $100,000 or more to further the work. It should be the object of the fairs to exemplify as far as possible the work being carried on by the Agricultural College and the experiment stations. It is very much to be desired that the results of this work should be placed before the farmers in such a way that they may take full advantage of it. There is no better way to accomplish this than through the fairs. Experimental plots, contests in stock judging, demonstrations in chicken fattening, etc., all tend in this direction, and should be featured at the fairs.

Fairs should specialize on the leading products of their respective districts, and should be made of such commanding interest in these departments that the men who are following those branches of farming will want to be present. In a fruit section, a fair should appeal particularly to fruit men; in a dairy section, to dairymen, etc.

Here let me say that I have felt for a long time that the Superintendent of Fairs should render valuable service to agricultural societies by placing them in possession of the results of the investigations made by representatives of the Dominion Government in Great Britain as to the special requirements of the market there. These agents make it their business to learn the requirements of the fruit business, and of the bacon and poultry trade, etc. The knowledge thus acquired, brought before the farmers through the prize lists of their agricultural societies, would do much to increase the supply of the right kind of products. In the same way, the superintendents should watch the work of the agricultural college, experimental union, and of the fruit experiment stations, to ascertain what methods and varieties they recommend, and bring them to the attention of the societies.

I agree with Mr. Hodson that the time is coming when the secretaries of societies should be paid a sufficient sum to enable them to devote a large portion of their time to fair work, but we are not ripe for that yet. In the meantime there is one thing I should like to make a trial of perhaps in connection with one circuit of fairs to begin with. Where there is a circuit of twelve fairs, if each contributed $30, they could raise $360. This would enable them to engage the services of a man at $60 or $65 a month, who would give his whole time to working up the interests of these societies for three or four months. He would not be expected to take over and run the society, but to consult with the secretaries and directors, and find out what was specially required by each society to make its fair a success, improve the prize list, canvass for exhibits, arrange for special train service, etc. Such a man should be able to pay his way by securing advertisements for the prize list. If the fairs in a circuit would pool their prize lists, it would mean a circulation of five or six thousand copies, and would enable them to secure good advertisements from big firms and from breeders of live stock, etc. These men should keep in touch with the superintendents of fairs, and carefully watch the development of the features of our model fairs. The secretary, as a rule, is a busy man, and has litttle time for such matters, but the work could be well undertaken by such an officer as I have described. I think this should be tried during the present year, so as to ascertain how it works. The advice of a number of men such as these would be invaluable in considering how further to improve fair work.

Another very important thing is that the prize list should be made more educational. I may suggest to each society employing expert judges this year, that they give us a couple of pages in their prize list in which to inform the exhibitors how the judges

will make their awards. We did this in the prize list of the model fair of Eastern Ontario. The idea might be further extended with advantage.

Another matter that may be worth trying is to have the expert judges keep a record and description of the best animals they see at each fair, with the names and addresses of the owners, so that we can give that information to the public. Buyers wanting a certain type of animal could consult this list, and find out where they would be likely to obtain it. Mr. G. Gray judged horses at eastern fairs for two years, and frequently directed purchasers where to go to get what they were looking for. Many exhibitors made sales by this means. Entries at fairs might be increased in this, way, because if you can show a man that it will pay him to bring out his animals, he will certainly do it.

The secretary is, as a rule, the most important officer of a society, and I should like to see some arrangement made to enable the secretaries to meet together at some such gathering as this, and exchange opinions, with a view to the improvement of their methods of receiving entries, paying prizes, etc.

As to the question of insurance against rainy days, I am satisfied that a system can be worked out, and that it is very much to be desired. Five or six societies in our eastern circuit were in financial difficulties for years, and some are now, simply because of one or two days of rainy weather. If we could arrange some system whereby societies could provide something towards a common fund to be used to reimburse those who suffered from this cause, it would help our societies more than anything else that could be done. Some societies might claim more compensation than the facts would warrant, but I think that objection could be overcome by taking the average of their gate receipts for four or five years as a basis on which to verify their claim.

Mr. W. B. Sanders : Are you in favor of the clause we usually call the wet weather clause, under which the exhibitors are called upon to accept a percentage of the prize money if the weather is unfavorable ?

Mr. Cowan : No, I cannot say that I am, as I look upon it as being the entering wedge in many cases, which is separating the farming class from their local fairs. There would be no objection to it if applied equally to the special attractions. The trouble is that the bands and trotting purses and other special attractions are paid in full, often with the money deducted, by means of the wet weather clause, from the farmers' premiums. This whole question of the improvement of agricultural societies is still in its infancy. If our directors of agricultural societies will only awaken to the importance of the matter, and will unite in making one common effort, it would be possible for us to make our Ontario Fair Association the best in the world.

FRUIT AT OUR FALL FAIRS.

By W. A. MacKinnon, Chief of the Fruit Division, Ottawa.

I remember that when I first went to fairs, they were looked upon as a place where you could meet your friends, see your exhibit alongside of other exhibits, prove to yourself why you should have had the prize that someone else received, and have a good time generally. Things have changed since those days ; the show is now a business affair, and in my address to-day I shall take it for granted that we have here an assemblage of business men.

The fruit exhibit is certainly one of the most attractive features of the fair. More than that, it encourages farmers to take an interest in fruit, and to grow fruit in one of two ways, either systematically for the sake of the money to be made out of it, or with the view of supplying it for their own use. In the matter of fruit prize lists I have nothing to suggest that is revolutionary, but the plan is based on business principles, which, I think, will appeal to you.

The following is the classification I desire to submit :

CLASSIFICATION.

A. Commercial Division.

Class 1. Export varieties.
Class 2. Domestic varieties (not included in Class 1).

B. Amateur Division.

Class 1. Dessert varieties.
Class 2. Cooking varieties (not included in Class 1).
Class 3. Decorative exhibits.

A. Commercial Division.

An illustrative plate of five apples to accompany each exhibit. Every exhibitor to declare that all the fruit is his own growing.

Class 1. Export varieties.
Section 1. Barrels ready for shipment.
Section 2. Boxes ready for shipment (fruit wrapped).
Section 3. Boxes ready for shipment (fruit unwrapped).
Class 2. Domestic varieties.
Section 1. Barrels ready for shipment.
Section 2. Boxes ready for shipment (fruit wrapped).
Section 3. Baskets ready for shipment.

B. Amateur Division.

(Every exhibitor in Classes 1 and 2 to declare that all fruit is his own growing.)
Class 1. Dessert varieties.
Section 1. Three varieties, plates of 5 each, properly named.
Section 2. New varieties, a plate of 5, named.
Section 3. Seedling, plate of 5, named.
Class 2. Cooking varieties (not included in Class 1).
Sections 1, 2 and 3. As above.
Class 3. Decorative exhibits.
(Fruit need not be exhibitor's own growing.)
Section 1 (open to ladies only). Decorated dining table of fruit.
Section 2 (open to dealers only). Decorated show table or window of fruit.
It may or may not be deemed advisable to exclude from this division either all exhibitors or all prize-winners in Division A.

PRINCIPLES TO GOVERN AWARDS.

A. Commercial Division.

1. No award to anything less than a standard package for the market in question.
2. Plates not to count in the awards.
3. Out of 100 points, 60 to go to the fruit, 25 to the package, and 15 to the packing.

B. Amateur Division.

Classes 1 and 2. Fruit to count 90 points, correct naming, 10 points.
Class 3 :
Section 1. Fruit to count 50 points ; arrangement, use of flowers, linen, etc., 50 points.

Section 2. Fruit to count 50 points, arrangement and setting 50 points.

You will observe that under this classification I have divided the prize list into two main divisions: "A." Commercial Division, and "B." Amateur Division. In making this classification I have kept in view the fact that commercial growers of fruit desire information first as to the varieties that will succeed best in the district, and second, as to the varieties called for in the home and the foreign market; and that the amateur grower desires to know what varieties are best suited to his own use, and will thrive best in his section.

I think that the varieties for which prizes are given should be determined on the strength of the information derived from two sources. As Mr. Cowan stated, the Department of Agriculture at Ottawa conducted investigations in order to ascertain what varieties are in constant and steady demand in the British markets. This information is contained in two bulletins, one dealing with the export apple trade and the other with the export pear trade. These may be obtained free on application to the fruit division at Ottawa. From these publications you can obtain a list of varieties best suited to the district. Given this information, it is easy to elect a list of varieties for prizes, which will be educational in every sense of the word, and a guide to planting or top-grafting, as the case may be.

One of the most important objects of an educational fruit exhibit is to inform the farmers what to grow. Along with that information, he should be told for what markets he is to grow his fruit. For instance, if a certain variety of apples is especially desirable in a particular locality, that variety should be recommended, but it should be clearly pointed out that it is for local use, unless it is one of the comparatively few varieties that are always acceptable in Great Britain.

The next step is to inform the grower how to produce a first-class article. If you make an entry and are beaten, it shows that your fruit is not first-class. You want to know why this is the case; you do not want to exhibit next year, simply what comes to hand in the process of Nature; you want to learn how to produce an article that will take first place. To give this information is the function of the judge. The judge should in every case be prepared to give reasons, and definite provision should be made for a time and place at which he will do so.

When I speak of making an exhibit as first class, I mean that the grower should know not only how to treat his orchard in order to produce a first-class article, but also how to grade and pack his fruit. The packing and the appearance of the fruit has much to do with the way it sells, and the judge would be prepared to instruct the exhibitor, not only how to grow his fruit, but also how to pack it to the best advantage. With this in view I have made provision in the arrangement submitted for the fruit to be exhibited in suitable packages, allowing so many marks for the package and so many for the packing. The package should be such as is recommended for the purpose in question. If an export variety is called for, a commercial package proper for that variety should be included in the exhibit. It will not do to show fine export Spy apples in a small basket, such as is used merely for local trade.

One of the chief faults with prize lists is that they do not distinguish between commercial standard varieties and varieties that are untried, or are at least doubtful, or are useful for the growers' own table. A clear division should be made, and we should avoid offering prizes for varieties that we cannot recommend the grower to plant, as to do so is merely to mislead.

I do not think it would be desirable to follow the proposed classification too closely at first, but if it were adopted in the main, it would do a great deal to create a clear and systematic understanding of the capabilities of the country in regard to fruit production, and to encourage the planting of useful varieties only. We are producing a large quantity of apples in Ontario for export, but only a small percentage of the fruit grown is ever used either at home or abroad; a large quantity of it rots or disappears. Why should not the prize list tell the grower what to produce for export,

and why should not this information be backed up by intelligent judges who can explain how unproductive or unprofitable trees may be converted into profitable trees.

The fruit division will do all in its power to assist fairs in carrying out a programme of this sort, and will gladly furnish such members of our staff as are available to act as judges and give information on the growing and packing of apples.

Q.: Do I understand that the judging is done merely by the eye? I have forty varieties in my orchard, and many of them are so much alike that, judged merely by the eye, you could not distinguish between them as to quality.

Mr. MacKinnon: The quality of the fruit should count materially in making the awards. I have suggested that sixty points should be awarded for export varieties. These points would be subdivided by the judge, who would allow so much for appearance and so much for quality. In purely decorative varieties it might not be necessary to take quality into account. Some might consider that the Ben Davis would fill all the requirements in that class, as it is highly esteemed in the British market for decorative purposes.

A Delegate: In Middlesex, where I live, I never saw an apple cut in two to examine it, and I have attended many exhibitions.

A Delegate: Do I understand you to say that the Dominion Department will furnish judges for fruit?

Mr. MacKinnon: We can furnish a few judges.

Q.: On what terms?

Mr. MacKinnon: Entirely free. We have a staff, although not a large one, which is chiefly engaged in inspecting, and at times these men are available to act as judges. At such times we will be only too glad to send them.

Mr. W. H. Bunting, St. Catharines, President of Ontario Fruit Growers' Association: While the fruit industry of the Province may not be as important from a financial point of view as some others which have engaged your attention, yet from the fact that there is scarcely a settled portion of the Province but can produce fruit, or at least some of the hardier classes, it is evident that the question of fruit is an important one to the entire Province. I regret that fruit statistics are not obtained that give an accurate estimate of the output, and trust this may be remedied in the near future. There is no product of the soil which gives so accurate an idea of the desirability of a country as a place to live in as the fruit production.

Our fruit products, when shown at the international exhibitions that have taken place from time to time, prove that the Province of Ontario can hold its own with any other country of like conditions. This being the case, the question of education for the fruit grower is a most important one. There is possibly no industry that requires such expert knowledge and has so many obstacles to contend with as the growing of fruit. What with innumerable fungous diseases, and the extraordinary increase of insect pests, the lot of the fruit grower is not an easy one, and when you add to that the perishable nature of the products, and the difficulty in placing them upon the markets in a presentable condition, this difficulty is very much accentuated.

If our fairs are to be of any benefit in this connection, they should make a special point of educating the people as to the varieties to produce. We have in this Province thirteen experiment stations, where the different classes of fruit are experimented with, but in going up and down the Province and examining the orchards, you will be led to believe that every fruit grower had constituted his farm an experiment station. A gentleman at this meeting referred to having forty varieties in his orchard. One of our experimenters stated to me yesterday that in visitng a certain section, he found almost every variety present that the nurserymen handle and very few of any one variety. A nurseryman told me that one man gave him an order the other day for fifty varieties at one time. This is a very unfortunate state of affairs, and is a great disadvantge from a business point of view, as it makes it very difficult for buyers to get large consignments of any particular kind.

Three things are of value in connection with a fruit exhibit at a fair. First, there is the educational feature; then the division of the varieties with a view to the purposes for which they are intended, which may be said to be the commercial aspect of the exhibit; and, third, and related to it, is the question of suitable packages for the export trade. This is a matter which should be taken up at once, and everywhere the people should be educated as to the best means of handling and packing their fruits for the purposes for which it is intended. The Province has been laid open to very strong criticism in reference to packing. We have had criticisms from the Northwest and from the Old Country in reference to fraudulent packing, and the fairs could do a great deal in educating the public on this question.

A large proportion of the fruit we grow, however, is for local use and for home use, and there are many varieties of fruit that are well adapted for that purpose, and have every quality except the carrying quality, and these must not be lost sight of. I think that the plan outlined by Mr. MacKinnon will be of value to the fruit industry if carefully carried out, and I commend it to your consideration.

A Delegate: I have found out my mistake in having so many different kinds. One reason for it is that many of the trees sent me by nurserymen were not true to name, and turned out to be entirely different from what I had ordered.

Mr. W. B. Sanders: As President of the Fruit Growers' Association of the Georgian Bay District, I have been very much interested in Mr. MacKinnon's remarks. The points he has raised must interest every fruit man. I think it will be of great benefit if Mr. MacKinnon will see that the classification proposed is sent out to the secretaries of fairs. We look upon the fruit grown in the Georgian Bay district as the best in the Province, and I think that the district deserves more attention by the Department at Ottawa than is being paid to it. We know pretty well how to grow fruit, but should be glad if Mr. MacKinnon could devise some scheme whereby we could bring our fruit growers to co-operate one with another, and have a central organization for marketing their fruit, as I am convinced that greater returns would be received by the growers if some such system were adopted.

Mr. G. C. Creelman: I have one suggestion to make which I overlooked in my report. I believe it would be a good thing for the fairs if they would arrange themselves not only into groups, as they do for expert judging, but form local fairs associations as well. We should then be enabled to carry out the idea that seems to be present in the minds of most of you, and which Mr. James referred to in his address, namely, that societies should do more to promote the welfare of the special line of the agricultural industry that is paramount in their respective districts.

We have at present three local fairs associations, the Niagara Peninsular Association, the Ottawa Valley Association, and the Midland Counties Association. I attended the meeting of the latter this year; next year it will be held in Toronto. They do not send as many representatives, but they are doing just as good work as this association, and they have similar interests at heart. These local associations get together and formulate their own plans for the upbuilding of each and every one of their fairs. When we discuss matters here, each speaker naturally thinks of his own particular locality, and while an association of this kind is useful for arousing enthusiasm, and for lectures and talks by professors on their own particular line of agriculture still I believe that inside of this association there ought to be smaller associations where the managers of the fairs could meet together once or twice a year and discuss matters. Through such associations Mr. Cowan would be able to carry out the idea expressed to-day as to co-operation. Mr. Cowan will, I am sure, attend any meetings you may wish to call for the formation of local associations. There ought to be such organizations in all the districts where the conditions are somewhat similar. We are too big and too unwieldly here to talk other than general principles. I believe you will not do your best work as fair managers until you and those from your neighboring counties get together and discuss matters among yourselves.

I now pass out from your midst as your active superintendent. I do so with feelings of the utmost good will for one and all. Some of us have had our differences of opinion at times, but I want to say that I am dropping out of the work with the most kindly feelings towards everyone, and I hope that our relations will continue so kindly that you will in your capacity as fair managers use me in my present capacity as far as you can for the upbuilding of the fairs of the Province of Ontario.

Mr. F. Birdsall moved: "That this Association feels great regret that Mr. Creelman has been compelled on account of his acceptance of a more important office to relinquish his work as superintendent of fairs, and at the same time conveys to him its thanks for the able manner in which he has conducted the work of the Association since his appointment."

In seconding the motion, Mr. McNeill said: I have been very closely associated with Mr. Creelman in this work, having visited at his suggestion many of the fairs, and can only say that I have never worked with anyone who was more enthusiastic, or who had more buoyancy in his disposition, and more enthusiasm for new schemes, or more confidence in everything that was good in the old schemes than Mr. Creelman.

The motion was put to the meeting and unanimously carried.

Mr. W. B. Sanders: I wish to move a vote of thanks to the retiring President. The success of the organization is largely due to his businesslike thoroughness, and to the gentlemanly way in which he has treated everybody.

The motion was unanimously carried.

After passing a vote of thanks to the speakers who had addressed the convention, the meeting adjourned.

FINANCIAL STATEMENT.

The auditors presented the following report, which, on motion of Mr. Stafford, seconded by Mr. Lapp, was adopted:

We have examined the accounts of the treasurer for 1903, and find them correctly kept. The balance on hand from last year was $32.88; the receipts for the year from members' fees were $83.00; expenditures, $104.17; leaving a balance on hand of $11.71.

W. F. KYDD,
W. E. SMALLFIELD.
Auditors.

Toronto, Feb. 18th, 1904.

Upon motion, duly moved and seconded, it was resolved: "That the constitution of this Association be revised and put in such form as to be available for the use of the members of the Association.

Crushing stone in Montague Township.

NINTH ANNUAL REPORT

OF THE

Commissioner of Highways

Ontario

1904

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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1905

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To His Honor W. Mortimer Clarke,
Lieutenant Governor of Ontario.

May it please your Honor:—

I herewith beg to present for your consideration the ninth Annual Report of the Commissioner of Highways relating to Road and Street Improvement in the Province of Ontario during the year 1904

Respectfully submitted.

J. O. Reaume,
Minister of Public Works.

To the Honourable J. O. Reaume,
Minister of Public Works.

Sir,—

I have the honor to submit to you the following report for the year 1904, being my ninth annual report on Road and Street Improvement in Ontario.

I have the honor to be,
Sir,
Your obedient servant,

A. W. Campbell,
Commissioner of Highways.

Parliament Buildings,
Toronto, Ontario, 6th April, 1905.

Ninth Annual Report

OF THE

Commissioner of Highways.

HIGHWAY IMPROVEMENT IN ONTARIO.

The total length of roads in Ontario amounts to 60,000 miles. This does not include streets of towns and cities, but the country roads only, maintained by township and county councils. This suggests a public work, the extent, the immensity of which few realize. The improvement of these roads is a work which has required, and still requires an enormous expenditure of money and labor. Distributed as this work is, in a uniform manner, throughout the Province, each municipality and community attending to its own small portion, the larger character of the work as a whole, is too apt to be overlooked. A realization of the true extent of this work brings before us the great drain which this work has involved in the past and the still greater expenditure which future requirements demand. It has already cost the people of the Province millions, and will still cost millions. No possible measure can un-

Near Barrie.

do past expenditure; no possible means can avoid future expenditure; roads are an absolute necessity; the country cannot exist without them; that is the situation and it must be faced.

Since the inauguration movement for better roads, methods of constructing and maintaining the highways of Ontario have been steadily undergoing a radical change, with a corresponding improvement in the condition of the roads. From every township and county is coming the demand for better roads. The reasons for this are many, and, if followed to their logical conclusion, point to the one result—that the opportunities of farm life are definitely restricted by the condition of the common country roads.

Distributed as this work is, and carried on continuously year after year, a bird's eye view presents a very complex organization. Upon the perfection

of this organization the progress of the work depends. Money and labor without perfect organization will be wasted. With perfect organization every dollar expended will be of benefit, and a profitable investment.

Road construction in Ontario is, with minor exceptions, under either county or township councils. Township control is universal; while in certain cases, county councils have undertaken the management of a system of the main roads within the county. The organization should, in the main features be the same in both cases.

Statute labor has been the main feature of road improvement in Ontario for a centruy. While it has accomplished much, there is much that statute labor cannot do. It was suited to the spirit and requirements of pioneer days. To-day where statute labor is retained, the rule is that only a fraction of the work is performed, and the work done is not of the durable character that the traffic demands.

Statute labor has now been superseded in more than 25% of the townships by a system of commutation, or, in some cases, the statute labor roll is abolished, and a special rate levied with the ordinary township rates. There are various differences in detail; but the general plan is to appoint an overseer for the township, or one for each of two, three, or four divisions of the township, under whom all work is performed, subject to the directions of the council. The work may be done either by day labor or by contract; and in the latter case, the overseer is the township's inspector. The work of the council in this way becomes legislative alone; while the overseers are the executive carrying out the work as required by the council.

The county method of management is the same in its general principles. The work of the council is devoted chiefly to legislative functions; and the actual oversight of work on the ground is deputed to road foremen or overseers, these in most cases under a commissioner exercising general oversight for the entire county. County systems are aided by the Provincial Government to the extent of one-third of the entire cost of construction, the counties which have adopted this plan being Wentworth, Simcoe, Lanark, Oxford, Lincoln, Wellington and Hastings, while Victoria and others are on the eve of doing so. Thus under The Highway Improvement Act, county councils covering 20% of the Province, have adopted county systems, taking over 1,624 miles of main road, and expending thereon in the years 1903-4 nearly half a million dollars.

Modern methods of road construction demand, for economical, and efficient work, the use of machinery. The principal of these, grading machines, are in general use, very few townships being now without one or more. The cost of grading roads and keeping them in repair has, by this means, been largely reduced. Stone crushers are employed by a number of townships where gravel is not to be had and quarry or field stone is available. Road rollers, wherever used, are regarded as one of the most essential implements for road work. Horse rollers are most commonly employed for country roads, while steam rollers are preferred by the towns. In addition to these, graders, crushers and rollers, are a number of minor implements such as wheeled scrapers, pick plows, and gravel wagons, which materially assist in the work of roadmaking.

More care is now being taken than formerly, to select the most suitable material for road purposes. The best gravel beds are selected, and care is taken to properly treat the gravel in the pit. Broken stone is now being employed for roads of heaviest traffic, particularly where good travel is not plentiful.

The hauling of gravel is now a matter of reduced cost. Special wagons holding a yard and a half can be had; or if these are not used, the ordinary kind is equipped with a box that will hold nearly as much. The right proportion of men are kept at the pit, so that they and the teams will not be allowed to stand idle.

The placing of gravel on the roads is more carefully done. The earth sub-grade is first consolidated with the roller. On this the gravel or stone is spread to the desired width. The large stones, not removed at the pit, are raked forward so as to be under the next load and in the bottom of the road. The roadbed as thus formed is then consolidated and made ready for traffic.

Drainage is a matter of first importance, and every attention is given to keeping open the surface drains, placing tile drains where under-drainage is needed, and carrying these to frequent outlets, where the water will be removed along natural water-courses.

Bridges are being built with steel superstructures, concrete abutments, and concrete floors. Culverts are being made of concrete tile or concrete arches. The renewal and repair of temporary wooden structures has in the past been a serious drain upon monies available for road purposes, but the use of permanent material, while greatest in first cost, is a measure of economy in a term of years.

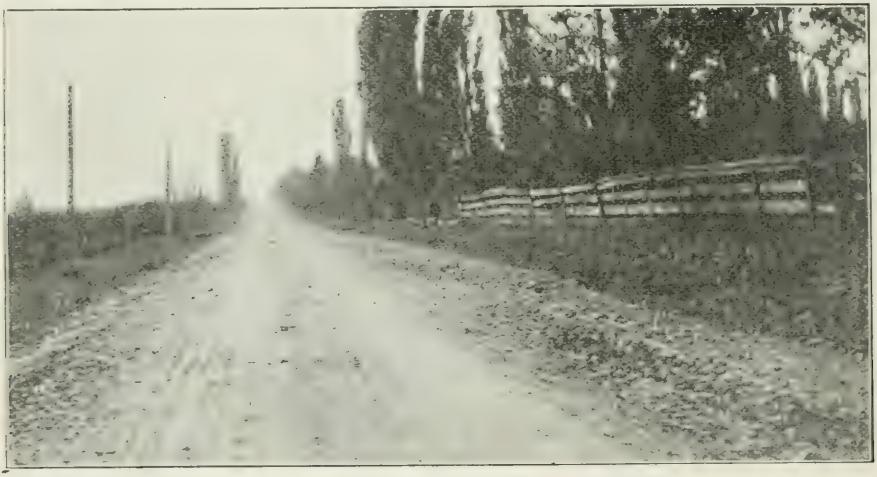
Road improvement is now progressing in long stretches, where heretofore work was done in patches. There is an effort to spend a certain sum each year on permanent work, at the same time keeping all roads in repair. This process of constructing the most heavily travelled roads first in a durable manner, gradually extending the improvement to all, will ultimately result in the completion of a system of highways fully adapted to modern requirements.

The main objects to be reached in this work are, (1) perfect organization; (2) the most permanent work possible with the means available. Good work and good materials are always cheaper than poor workmanship and shoddy. Good roads constructed under a carefully considered and well organized system will prove a measure of present and lasting benefit to the country.

Benefits of Good Roads.

The benefits arising from good roads are almost endless. They reduce the isolation of farm life. They enable the farmer or his family to attend church, school, public meetings, social gatherings, with greater comfort and regularity. They facilitate the distribution of mail. They enable the farmer to get a daily paper. They enable the farmer to keep in closer touch with market prices. They reduce the cost of taking farm produce to market. Farm produce reaches the market in better condition, particularly fruit and vegetables, and perishable stuff. In dairying districts, the cost of hauling milk is much reduced, it can be hauled with much greater convenience, and reaches the cheese or butter factory in better condition. Factories can be farther apart, the cost of making the cheese reduced, and greater uniformity secured. Wear and tear on horses, harness and vehicles is lessened. A doctor can be summoned more quickly, and human life, in cases, saved. They do away with the profanity and bad temper caused by bad roads. A farm always looks better from a good road than from a bad road; no farm ever looked well when viewed from a road axle-deep with mud. A good road improves the general appearance of the country. Some men are wasting half their lives driving over bad roads; good roads effect a great saving in time. Good roads attract a greater population to the country. They enable the farmer to visit the store and provide himself with the comforts of life more

readily. Broken farm machinery can be repaired more readily and quickly. They enable the farmer to use good carriages and to keep them in better condition. A farm with a good road leading from it to the market is worth more money and will sell more readily than if the road is bad; they increase land values. The retail merchant will sell more goods, for the farmer can visit his store more frequently. The wholesale house will sell more goods to the retail store. The manufacturer will sell more goods to the wholesale merchant. The raw material for manufacture can be hauled more cheaply on its first journey over the country road, to the advantage of all. The publisher will sell more newspapers and other literature. The physician can extend his practice over a wider area of country and drive over the roads with greater comfort and safety. The clergyman can visit the rural portions of his parish more readily; visiting the sick and holding divine service, having a more regular attendance at the latter. The schoolmaster will secure a more regular attendance of pupils. Freight will be received by railways and steamships with greater regularity, tending to equalize



A County Road in Simcoe, near Collingwood.

the amount carried at all seasons of the year, cheapening the cost of transportation. There is no class of people but will profit by the more prosperous condition that good roads create.

Freight Rates and Main Highways.

With the construction of a network of railways throughout the Province the opinion is apt to arise that the principal use of the common road is to serve as a feeder to the railway; and that, in consequence, the comparatively short road leading from the rural sections to the nearest railway station is the road deserving chief consideration. The value of permanently improving such roads can hardly be overestimated, for undoubtedly the road leading from the several farming districts to the nearest shipping point and market is of the highest importance to every community.

At the same time, the service performed by such roads does not do away with the fact that the main country roads, often paralleling the railways, have a most important function to perform in that, if well-built, they are a means of competing with the railroads, and contribute towards a reduction of railway rates, just as waterways, tend to the same result. It is admittedly the case

that the chief factor in a reduction of freight charges from the west to the Atlantic seaboard has been the competition afforded by water-carriage on the Great Lakes and St. Lawrence canals. A few years ago as a protest against excessive freight charges, the merchants and manufacturers of Toronto and Hamilton successfully organized a wagon service between the two cities, a distance of forty miles, over roads which were far from good. In France, Germany, Belgium, England, the common roads are a constant competitor with railway traffic for distances up to two and three hundred miles. This arises from the excellence of the roads in these countries, and the ease with which enormous loads of farm produce and manufactured goods can be carried.

Wherever, in Ontario, the country roads have been constructed in an up-to-date manner, one of the most startling benefits at once apparent to the users of the roads, has been the greatly increased loads that can be drawn over such roads. The efficiency of good roads as a factor in transportation, and in competition with the railroads, tending to a reduction of freight rates, is a matter of marked importance to all agricultural interests. A little experience with better roads will show that the people of Ontario, in improved common roads, have a most valuable means of securing fair railway tariffs. The automobile, from present indications will be a powerful factor to this end. What a road must be, to be a good road, should not be misunderstood. A good road is one best answering in a broad sense the requirements of economic fitness. Money spent on road construction is an investment from which adequate returns are to be expected. A road the cost of which is excessively great, in proportion to the use made of it, however smooth, hard, easily travelled, and durable, may be far from being a good road. On the other hand, a common dirt road may be a good road if it is made and maintained so as to properly meet the needs of traffic. In Canada therefore we do not need English, French nor Roman roads, but we want Canadian roads, each mile adapted to local requirements and conditions.

GOOD ROADS IN OTHER LANDS.

A superficial view of the road question inclines many to the impression that, as railways are constructed throughout a country, the need for common roads diminishes. A more untenable opinion could not be advanced. Railways develop a country, and experience in every land and age, has shown that development means that more and better common roads are needed. With the growth of a nation better roads are an ever-pressing, an ever increasing necessity.

The good roads movement is world-wide in activity. In France, Germany and all progressive European countries, there is a constant demand for the best methods and systems of road management and construction. In England the roads are excellent, and are maintained in an efficient manner by county and parish authorities. Yet even there, it is felt that there is room for improvement. A Good Roads Association is actively carrying on a campaign in Great Britain, and there is now a widespread demand for a National Department of Highways, and for state aid in road construction.

An outstanding measure for road reform in the United States has been the creation of the Office of Public Road Inquiries, by the United States Government at Washington. As with the Bureau of Highways of Ontario, the work of the United States Highway Department has been to investigate all methods and materials of roadmaking, prepare and distribute literature, and in every possible way to aid in the movement for better roads. The Wash-

ington Bureau has worked largely on the plan of organizing state road associations and commissions, holding conventions, and building model sections of road. In this work it has co-operated with the United States National Good Roads Association in connection with a good roads train. To the work of this Department, $50,000 is appropriated annually, but a strongly supported Bill is now before the House of Representatives providing for a large measure of Federal aid to the actual work of road construction in the various states.

Massachusetts.

Massachusetts has a State road commission, a State aid law, and an efficient corps of highway engineers. All roads built by the State are upon petition of municipal authorities. Three-fourths of the cost of construction and maintenance is paid by the State, and one-fourth by the municipalities. The commission consists of three members. The secretary of the board is chief executive officer; all communications and orders pass

A Lanark County Road, near Carleton Place.

through his hands and he generally controls the movement of all the engineering force. The State is divided into five divisions; each division has a division engineer, who attends to constructing and maintaining State roads. They also make preliminary studies of roads to be built, and report on conditions of soil, traffic, drainage, and location of rock, gravel and other materials to be used in building. They also advise with municipal road officers, on materials and methods, in regard to local roads to be built by town funds.

Resident engineers are employed on each road. They mark the grades on the stakes, define the lines of the roadway, and generally supervise the work and see that the specifications are properly carried out. The resident engineer is under the direction of the division engineer and reports directly to him.

An engineer in charge of the office directs the making of plans, profiles and cross-sections, establishes the layout lines and grades, and makes all plans for bridges, culverts and other structures. Up to the present time, the State has appropriated $5,000,000 to this work.

Pennsylvania.

The Pennsylvania Good Roads Act provides for the appointment of a State highway commissioner who is to be a practical engineer. His duties in brief are to collect information and compile statistics concerning the character and condition of the highways throughout the State; to investigate and determine the character of roads best suited to different sections, to furnish information, when called upon to do so, to the various township, borough, and city road and street officials; to receive petitions and to decide upon the construction of roads under the provisions of the act.

The sum of $6,500,000 is appropriated under this law to be apportioned among the different counties in proportion to the mileage of roads in each county and to be expended during a period of six years. Of this sum $500,000 is available during each of the first and second years; $1,250,000 during each of the third and fourth years; and $1,500,000 during each of the fifth and sixth years after the passage of the act. Township road officers desiring to take advantage of State aid must petition the county commissioners to that effect, and the commissioners in turn must forward the petition to the State highway commissioner, accompanying it with a map or plan of the road it is proposed to improve, and a statement of the kind of material available for use in its construction. The cost of building the road is divided as follows: two-thirds to be paid by the State; one-sixth by the county; and one-sixth by the township or townships which the improved highway traverses.

Maryland.

The State of Maryland has a Highway Commission and a Division of Highways. A State law provides that, on the petition of the county commissioner, or two-thirds of the residents along any highway, the highway shall be improved under the Division of Highways. Half the cost of both construction and maintenance is paid by the State, two-fifths by the county, and one-tenth by land owners along the road. The good roads movement is very progressive and a large road mileage is being built under the State law.

New York.

An Act of the New York State Legislature provides that, on petition of a county council, certain roads may be adopted as State roads. The petition is first presented to the State Engineer. If he approves of the section of road thus sought to be improved, he prepares plans, specifications and estimates. These are presented to the Legislature, and if approved by that body, fifty per cent. of the cost of construction is paid by the State. Over $3,500,000 has been expended by the state since 1898, under the direction of the State Engineer.

New Jersey.

The New Jersey Highway Law provides that, on the petition of the owners of two-thirds of the land bordering on a road, the State Commissioner of Public Roads will cause the road to be improved in accordance with plans and specifications prepared by him, subject to the approval of the Legislature. The owners of the land affected by the improvement pay one-tenth of the cost: the county pays six-tenths; and the State three-tenths. Road improvement in this State is being carried on most satisfactorily.

Connecticut.

Connecticut has introduced a plan of highway improvement providing for the appointment of a State commissioner. When a township votes in favor of constructing a road under the provisions of the State Highway Act, specifications are prepared and submitted to the State commissioners. If the commission approves, the township council lets contracts for the work to be performed under the supervision of the State commissioners. One-third of the cost is paid by the State; one-third by the county; and one-third by the township. The expenditure by the state in this way is limited to $75,000 annually.

Rhode Island.

The State of Rhode Island has appointed a Commissioner of Highways. When a council represents to the Commissioner the need for improving a certain road, an examination is made by him. If he considers the work necessary he prepares plans, specifications and estimates, and reports to the municipalities affected, also to the State Legislature as to the proportion in which the expense should be met by the State, and the municipalities benefited. If the State legislature approves, the work is performed by contract.

Delaware.

A recent Act, passed by the legislature of Delaware, provides for a Highway Commission of three members, and grants State aid to main county roads constructed under the Act. The State pays half, and the county half of the cost of construction. The first work under the Act was performed last year.

Vermont.

Vermont in 1898 established the principle of State Aid to permanent highway construction, the aid so granted to be administered by a State Highway Commissioner, who also furnishes engineering advice in regard to construction and maintenance of roads and bridges.

Ohio, Maine and Others.

Ohio passed a State Aid law in 1904, and this year a State Bureau of Highways has been created, to administer the provisions of the Act, and in general, to aid the movement for good roads.

The State legislature of Maine in 1901, inaugurated a system of State aid for highway improvement. California has a Bureau of Highways and contributes largely in the form of State aid, and the construction of leading roads by the State. Similar government departments and acts exist in Illinois, Indiana, Kentucky, Wisconsin and other of the States.

MANAGEMENT OF TOWNSHIP ROADS.

Numerous townships are, at the present time considering the advisability of doing away with statute labor, and adopting in its place the system so successfully in use in over one quarter of the townships of the Province.

In taking this step, no special procedure need be followed. The Municipal Act empowers councils to pass a by-law for this purpose in the ordinary manner, and before taking action councils may, if they so desire, submit the question to a vote of the people, but this is not necessary. There is at first, in every township, a certain amount of objection to the change, but unless se-

rious opposition is likely to arise, it is preferable that councils pass the necessary by-law without a vote of the ratepayers. If a proper plan is adopted in place of statute labor, and if this is carried out in an energetic and painstaking manner, any ordinary opposition will be short-lived, and will be converted into strong support, by the benefit which is sure to result to the roads. The plan usually adopted comprises in its main features the commutation of all statute labor at a fixed rate per day, and the appointment of one road commissioner to oversee all road work under the direction of the council.

The system however, is not fixed in these and other details, but should be arranged to meet local conditions as they exist in each township, striving to adopt methods that will commend themselves to the rate payers and the condition of the roads, as determined by previous experience. Whatever plan is finally adopted should be carried into effect with care and energy. No system can be established by by-law, and then left to itself to

Concrete floor and abutments ; steel superstructure ; span 30 feet ; cost $825 ; see page 44.

make and repair the roads. The best plan that can be devised will prove a failure, unless the council and people try to make good use of it. Mistakes will be made the first year both in plans and work, but these must be rectified as quickly as possible, and in the light of experience, the entire system becoming gradually perfected year by year.

The Commissioner.

It is particularly important that the road commissioner or commissioners appointed by the council shall be thoroughly capable and practical men, who can plan the work of improvement with a good understanding of the principles of roadmaking, can carry the work on methodically and with good judgment, can conduct the purchasing and business portion of the office to the best advantage, and who can direct and manage the men employed.

One road commissioner is appointed for the entire township, or, if desired, the township is divided into a convenient number of divisions for road purposes, usually two, three, or four, and a road commissioner is appointed over each. This practically amounts to a reduction of the number of pathmasters,

and the enlarging of the road beats. It is essential to the success of the proposed system. To merely commute statute labor and retain the former number of pathmasters, giving each a small amount to spend, means a perpetuation of most of the defects of the statute labor system.

It is preferable to reduce the number of road commissioners to the lowest practicable limit, and have foremen engaged from time to time to oversee works which the commissioner cannot personally direct. As time goes on, these foremen may be recruited from among the most capable workmen as they become experienced in roadmaking under the commissioner.

The commissioner should be retained in office as permanently as the average clerk or treasurer, in order that his experience, increasing from year to year, may enable him to do more perfect and economical work. Continuance in office should be the reward of good service. One year's experience in charge of the roads of the whole or half the township is worth a score of years merely as pathmaster, over a mile or two of road, the work of which occupies only three or four days annually.

Duties of the Commissioner.

The duties of the road commissioner, among others, are:

(1) To attend regular meetings of the council, or special meetings if so desired by the council, so as to receive instructions regarding works to be undertaken and carried on by him; the commissioner also reporting at such meetings of the council as to the road work then in progress.

(2) To report to the council early in each year as to the work required the coming season, to carry out the instructions of the council with regard thereto, and to perform such other services as may be required of him from time to time, under the instructions of council.

(3) To supervise all work and repairs done on the roads and bridges within his division.

(4) To acquaint himself with the best methods of constructing and maintaining good roads, and of operating graders and other road machinery used by the township.

(5) To employ, direct and discharge all men and teams, required to carry on the work, and to purchase necessary materials.

(6) To see that all washouts, drain and culvert obstructions, bridge failures, and other unforeseen defects are repaired or protected, with the least possible delay, so as to prevent further injury to the road, or accident to the users of the road, and to act promptly in all cases of emergency.

(7) To collect the poll tax in his division.

(8) To keep an accurate record of the men employed and the work done, and to furnish this written form to the council or road committee at proper intervals for their approval, in order that the township treasurer, under authority of their certificate, and upon being satisfied with the correctness of the statement, may issue cheques for the payment thereof.

(9) To stake out all works, (especially work for the road grader) and see that they are undertaken systematically, so that no time will be lost in taking men, teams and machinery from one part of the township to another.

(10) To surpervise the performance of all work done by contract, and certify as to completion, acting as inspector for the township.

(11) To supervise the opening of snow roads under such regulations as, in the opinion of the council, the needs of the township may require.

(12) To report to the council at the close of each year, showing in detail the character, location, and cost of each separate work undertaken.

(13) Works, the cost of which will exceed a certain fixed amount (ordinarily from $10 to $20, as may be determined by the council) may be let by contract to the lowest satisfactory bidder, but in the event of any work being duly advertised to be let by contract, and the tenders being too high, in the opinion of the commissioner or the reeve, it should be the duty of the former to undertake the work by day labor under his own direction.

Work of Councillors.

It is not best for councillors to act as road commissioners. Councillors, like the pathmasters of the old statute labor system, are elected annually, and cannot become experienced. There is a tendency for them to use their office not so much for the benefit of the roads as to gain votes for the next election. The ratepayers are apt to become dissatisfied unless councillors perform the duties of commissioner without remuneration. Councillors cannot be so independent as are road commissioners, and they cost the township fully as much in commissions, mileage fees, etc.

This does not mean that councillors should take less interest in the work of roadmaking. On the contrary, it merely means that the commissioners are men who will carry out the wishes of the council. The council directs, and criticises,—the commissioner performs. The council may constitute "Road and Bridge Committees" to suit the road divisions, in order that the road overseers may consult the proper councillors as occasion arises, with regard to details of the work.

Councillors should examine and inspect the work being done in their division from time to time, should keep in close touch with it, and all requirements of the division with respect to roads. But, after receiving instructions from the council or road committee for the division, the influence of the commissioner over his men should not be weakened by undue interference on the part of members of the council. The men on the work must be under the authority of the commissioner, otherwise responsibility cannot be centered in him. The men and teams should always be engaged or dismissed through the commissioner, but of course, the commissioner is at the proper time subject to the desire of the council in this regard.

In addition to the more specific instructions given to the commissioner, from time to time, a general plan for road improvement should be laid down by the council for the commissioner to follow. This plan should specify the width to be graded, width and depth of road metal, character of drainage, etc., of all roads, and should include the numerous details which it is not necessary nor advisable to include in the by-law, as they are subject to change from time to time.

Road Divisions.

While the former statute labor road divisions should be abolished, nevertheless other larger divisions may be created to separate the work of road commissioners; or divisions may be made to assist in adjusting and distributing the expenditure. It is desirable, as far as possible to concentrate the expenditure sufficiently to secure permanent work. At the same time, there is apt to be a feeling on the part of many of the ratepayers that the commutation money should be returned each year in road improvements, to benefit the peo-

ple who contributed it. While durable work commencing at a few points and extended from year to year is the better plan, yet any method which seems to unfairly devote expenditure to a few roads will meet with disapproval. For the first few years particularly, work should be distributed throughout the different sections of each road division as evenly as possible, always endeavoring to make the roads permanent, giving preference in this respect to highways most used by the public. Anything that has even the appearance of favoritism in this respect will create dissatisfaction, and cause a desire to return to the old system. When the new system has become well established, when its benefits have become apparent, when the ratepayers have learned the advantage of doing permanent work, they will not then raise the same objection to a concentration of the expenditure, as each will know that, with the extension of permanent roads from year to year, his own turn will come in a substantial manner.

Appropriations from General Funds.

In addition to the money raised by the commutation of statute labor, the usual road appropriation is made from the general funds of the township.

A County Road in Simcoe, near Barrie.

This may be used for the purchase of tools, machinery and materials, for small jobs and contracts, for more permanent work on heavily travelled roads, providing gravel or broken stone, for doing special work on hills and cuttings, and the more general class of improvements that are of service to the township as a whole. As with the commutation money, however, all work should be done through the township road commissioner.

Residents of the Division Given Preference.

The residents of the township are employed to do the work, provided they come properly equipped, and will do a fair amount of work, preference being given to the ratepayers of the division in which the work is being done, in order that as many as so desire may have an opportunity to earn back the amount of their commuted statute labor.

Payment of Men and Accounts.

The road commissioner or foreman should be supplied with blank pay sheets. At regular intervals these, with accounts for material, should be sub-

mitted to the members of the road and bridge committee for the division. If the committee is satisfied with these they should so certify, and the township treasurer is thereby authorized to make payment.

Work is paid for in cash if desired, but preferably by cheque, where a bank is convenient, payment to be made in accordance with the pay roll submitted by the road commissioner, accompanied by necessary receipts and accounts, and such information as may be considered necessary.

As the commutation money is not collected until the end of the season with the regular taxes, it is necessary to make arrangements with a local bank to advance the money as required, in the usual manner; the total amount so advanced, being repaid to the bank before the end of the year, when the taxes have been paid in to the township.

Snow Roads.

It is not essential that all roads should be opened when blocked by snow. This is a matter, however, in which immediate action is necessary, for travelled roads, and one or two road commissioners cannot attend to it as with other work.

The council or commissioner should therefore appoint men in different parts of the township, where required, to collect the necessary labor, and act promptly, when roads are blocked with snow, the men employed to be paid in cash by the council in the usual way. Or if so determined by the council, the amount earned may be accepted as part payment of taxes for the year.

THE TOWNSHIP BY-LAW.

The township by-law wholly commuting or abolishing statute labor and providing a system under road commissioners for carrying on road work, need not be complex. It should be sufficiently complete, however, to define the system being adopted, in such a way as to provide for all probable requirements. It is desirable also that it should carry in itself, an explanation to the rate-payers, of the points in which they are likely to feel most interested.

The by-law should not, however, attempt to define every detail of how the work is to be done as details are likely to be changed from time to time, and can be given to the road commissioners each year in the form of general instructions. It should be remembered, however, that the by-law itself is not fixed, but is subject to revision from time to time. It is to be expected that experience from year to year will indicate possible improvements, and changing conditions will also necessitate changes and amendments.

Among the more important matters to provide for in the by-law are the following:

(1) Disposal of Statute Labor.

Provision should be made for the method of disposing of statute labor. This may specify a rate at which the labor to which each person is liable shall be commuted, usually fifty or seventy-five cents a day although some townships go as low as thirty-five cents, while others collect one dollar.

In view of the advanced rate of wages it is desirable that the commutation rate be not lower than seventy-five cents. This is reasonable in every way as not only does it now cost more to get roadwork done than formerly, but the value of every land-owners time for work on his own farm has also increased.

Some townships prefer to abolish the statute labor roll completely, and an additional rate on the township assessment is levied instead, for road purposes. This is, as a rule, the fairer method, as under the statute labor schedule, one dollar in the amount of assessment of a farm may make a difference of a day in the amount of statute labor required. On the other hand, it is feared in some cases, that, were the statute labor roll abolished, it might be difficult to make up an equal amount by a special rate, in addition to the usual appropriation from the general funds.

In the by-law, where the statute labor roll is abolished, and a special rate provided in its place, this rate should be specified; and it should also be distinctly stated that this rate is in lieu of statute labor. The rate should be such as to produce an amount equal to the statute labor if commuted at what is considered a proper rate per day.

If the statute labor roll is retained it may be well to re-state the schedule in the by-law, but this will depend in part on the previous by-laws of the township affecting statute labor.

(2) The Number of Road Divisions.

As a rule, the township should be divided into a certain number of road divisions. Even if only one road commissioner is appointed for the entire township, these divisions are frequently desirable, to assist in returning the road-money to the sections of the township which have contributed it. It may be well to specify that the money collected for road purposes (exclusive of that contributed from the general funds) shall be returned annually, in road-work, to each of these divisions according to the township assessment or statute labor roll. The number of these divisions varies with local circumstances, but they are commonly two, three, four or five. In defining their limits, three points should usually be kept in view: The work of the road commissioners if more than one is appointed; the convenience of councillors with whom the commissioner is to consult; the return of the road money to the ratepayers contributing it.

(3) The Number of Road Commissioners.

The number of road commissioners which it is wise to appoint is not the same for all townships. Where possible, the best plan is to select one commissioner only; he to employ foremen for works in the different parts of the township which he cannot personally oversee. In this way, the entire work gets the benefit of the general supervision of the best man available for the position. One good man, can as a rule, direct the work of the average township for a season; but this is dependent on the amount of work undertaken; the road mileage of the township; and the class of foremen he is able to obtain. Where the township is large, two or three commissioners may be appointed with good results, and the work apportioned so as to give 75 or 100 miles to each. The objection to appointing too many commissioners is that, as a rule, the kind of men best adapted for the position are rare; and on the ability of the commissioner, the success of the new system in a very large measure, if not wholly depends. Some townships provide that the councillors shall act as commissioners, but this, as elsewhere pointed out, is not the most desirable plan, as their tenure of office is uncertain etc. They should, however, act as committeemen, one or more to each division, with whom the commissioner may consult.

(4) Duties of Road Commissioners.

A clause should provide for the principal duties of the road commissioners. It is well to outline these in a general manner, so as to define the work of the commissioners, and show what is expected of them. The duties as shown on page 16 of this report, affords a suggestion of what should be included in the by-law. The duties may be more specifically stated in a set of instructions given the commissioners, and which are more flexible and easily changed than is a by-law.

(5) Method of Paying for Work Done.

The by-law should specify the method of paying for work done. It is usually required that the commissioner keep an accurate record of the men employed, the time during which they work, and the work on which they are engaged. At proper intervals, varying from one week to one month, pay lists are made out by the commissioner, are certified by him, and are then submitted to a certain authority for approval. This may be the reeve, a member

Crushing Stone for Lanark County Roads.

of the council for the road division in which the work is done, a committee of the council for the road division, or to the council itself.

It is generally preferable that the men be paid weekly, or fortnightly; in which case, the reeve, a councillor, or committee of the council authorizes payment, as the council does not meet frequently enough. The pay-sheet, certified by the road commissioner, and approved by the proper authority, is then handed to the treasurer, who makes out cheques for each person, or provides cash to make payment. The men may then be required to call at the treasurer's office, or the cheques or money may be handed to the men by the commissioner, each man signing the pay-sheet, as he receives the amount thereon specified. The pay-sheets as thus signed, are then open to the examination of the council at its next meeting, and to the scrutiny of the township auditors at the close of the year.

(6) Rate of Wages.

Accounts for material purchased and other expenses may be treated in the manner the council has been in the habit of dealing with them.

It is not well to specify in the by-law the rate of wages to be paid commissioners and others, as this is a matter subject to change from time to time. But it is proper to state that a day shall consist of ten hours faithful service, exclusive of the time spent going to and coming from work, payment to be by the hour except in case of job or contract work. A common rate for a commissioner is from 15 to 20 cents an hour, but as pointed out, this need not be specified in the by-law. The wages of men and teams will be according to the ruling rate of the locality.

(7) Appropriation from General Funds.

The by-law may provide that the council shall supplement the commutation fund by an appropriation, as previously, from the general funds, the amount so set apart, to be expended by the commissioner as directed by resolution or instruction of the council. While it is advisable that the commutation fund shall be returned to the road divisions in somewhat the same proportion as it is collected, yet the appropriation from the general funds need not be so divided. It may be used as previously, and is usually applied to the purchase of machinery, such jobs and contracts as have hitherto been met by the general funds, construction of bridges, culverts, improvement of hills, and other work of an exceptional nature. It may be reserved for the more durable road improvements, which it is desired to extend from year to year.

(8) Roadways, Gutters, Footpaths.

The by-law may define the general dimensions of the roads to be improved, directing that the roadway between gutters shall not be less than 18 nor more than 24 feet wide according to the importance of the road: that the width shall be uniform and in the centre of the road allowance as far as practicable: that gutters or ditches shall be constructed on each side of the roadway, of sufficient depth and width to properly drain the road: that these gutters shall be lined true and straight with sides evenly sloped; that they shall have a sufficient fall to free outlets at frequent intervals, emptying into natural watercourses: that such gutters shall be kept open and free from obstruction; that all portions of the highway outside of the gutters shall be kept apart as a footpath for the convenience of persons travelling on foot, and that it shall be unlawful, under a proper penalty, for any person to travel thereon either on horseback, or in a vehicle drawn by a beast of burden or propelled by steam, electricity or other motive power.

(9) Snow Roads.

In some districts it is important to make provision for keeping snow roads open. For this purpose, the council or commissioners may appoint men with power similar to pathmasters, to collect the necessary labor and teams to open roads when blocked. Men should be appointed only for roads which will be required for traffic, as it is unnecessary to open all roads. In some cases, there are certain points which are liable to become blocked, and men can be appointed for these only. A certain mileage of road may be left for the commissioner to take charge of, this to be opened by the use of snow plows.

Where there are wire fences the road seldom becomes blocked but may need to be cut down with a disk harrow, and then thrown out with a snow plow. These points will suggest the best course for a council to follow in framing their by-law.

INSTRUCTIONS TO ROAD COMMISSIONERS.

As pointed out elsewhere in this report, the by-law cannot cover all details in which it is desirable to specify the duties of the road commissioner, and the wishes of the council with respect to his work. A code of general instructions should be framed by the council to be given to each road commissioner at the time of his appointment—these to be subject to change from time to time by the council, and not to conflict with specific instructions which may be given by the council or committee with regard to any special pieces of work.

The following clauses indicate details which should be considered by councils in framing a set of instructions. It is not intended that they should be wholly followed in any case, but that they may be suggestive only, to be adopted, modified, or omitted as seems best suited to local conditions, and in conjunction with the provisions of the by-law:

In addition to your duties as specified in the township by-laws respecting highways, you will observe these instructions respecting the work entrusted to you so far as they do not conflict with subsequent directions affecting individual works or roads. In case of doubt or difficulty in regard thereto, you will consult with a member of the Road and Bridge Committee for the division in which the work is being done.

(1) Before letting any job or contract, the cost of which will exceed $10, you will confer with the committeeman living nearest the work to be done.

(2) Work may be done by contract or day's work as you consider most prudent, all contracts of $10 and upwards to be in writing on forms supplied by the township clerk.

(3) Appoint any foreman you may require in any locality to supervise work, keep roads open in winter, or take charge of any duty you may think wise or in the interest of the municipality for them to perform, reporting their names and duties at once to the Road and Bridge Committee, and including their time in the regular fortnightly pay-sheet.

(4) You will divide the work as much as possible among those residents of the township who desire employment on the roads, and who are in a position to do the work to your satisfaction, giving preference to those living in the vicinity of the work to be done.

(5) You will keep a careful memorandum of all work done by you, showing in detail the cost, men employed, time they are at work, materials used, etc.

(6) Pay-sheets for men and teams will be made out by you every two weeks, these to be certified by you and submitted to the Road and Bridge Committee of the division for their approval. Upon being signed by them, you will give the pay-sheet to the Treasurer of the Township, who will make out cheques for the respective amounts. When paying the men you will require every man to sign the pay-sheet in the proper column opposite his name. When thus signed, the pay-sheets will be returned to the Township Treasurer.

(7) The wages to be paid by you will not exceed, for man and team, 30 cents an hour; foreman, 17 cents an hour; and ordinary workmen, 15 cents

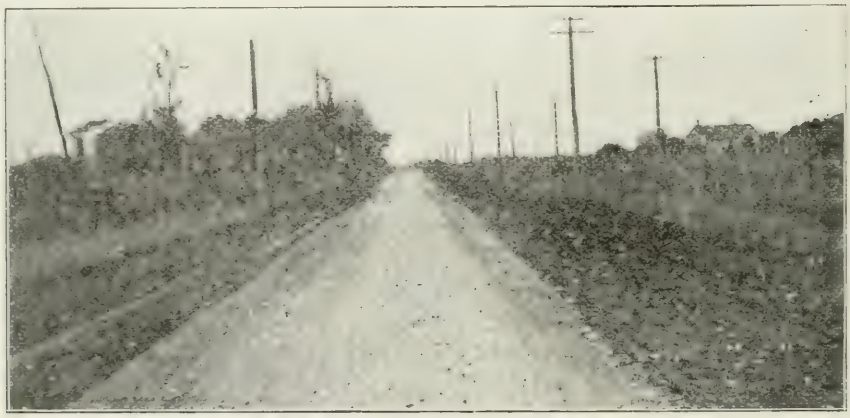
an hour. You will require from all employees ten hours as a day's work, but will pay all at a rate per hour.

(8) The amount of money available for your road division for the coming season is $, which amount, you will be careful not to exceed in planning your work, taking into account the wages of commissioners, foremen, teams, materials, and all items of cost. Out of this amount you will reserve $50 in each division to repair unexpected wash-outs, to keep open snow roads, and other unforeseen expenditure.

(9) Report to the Road and Bridge Committee of each division what shovels, picks, tools and other implements are required, taking proper care of all implements, tools, and machinery, and having the same properly housed when not in use.

(10) Give townline roads proper attention, dividing the territory with overseers of the other townships if you think desirable.

(11) In the practical work of roadmaking, remember that good drainage is of primary importance. Provide proper open drains, with a good fall and free outlet to carry away surface water; also lay tile drains where needed to carry away sub-soil water, as it is upon a dry and well drained subsoil that the strength of the road depends.



Wentworth County Road.

(12) Tile underdrains should be laid wherever the open drains are not sufficient, and where the ground has a moist or wet appearance, with a tendency to absorb the gravel and rut readily. By this means the foundation is made dry.

(13) Ruts should not be allowed to form. Where the road metal has been crowded out by traffic, draw it in to fill the wheel track by using the road grader, or employing a man to go over the road with a rake.

(14) Do not leave the gravel or stone just as it drops from the wagon, but level it so that travel will at once pass over and consolidate it before the fall rains commence.

(15) Roll the gravel or stone with a road roller until it is smooth and hard. If a roller cannot be had keep the new metal raked or scraped into the wheel and horse tracks until consolidated.

(16) Grade and crown the earth road before putting on gravel or stone, also roll the earth road before putting on the metal if a road roller is available.

(17) The grader should start work early in the spring, and be kept continuously in operation until the season's work is completed. Work for the grading machine should be staked out in advance, so that the several pieces can be taken up consecutively; otherwise much time is lost in moving from one part of the township to another. Keep the same operators and teams on the grader throughout the season.

(18) A sufficient crown for new gravel roads on level ground is one inch of rise to each foot of width from side to centre.

(19) The road on hills should have a greater crown than on level ground, otherwise the water will follow the wheel tracks and create deep ruts, instead of passing to the side drains. One and one-quarter inches to the foot from the side to centre will be sufficient.

(20) The work of cutting down hills should be undertaken systematically, a few being taken up each year and made good, the worst or most necessary being first looked after. Gravel or stone can then be put on permanently. The steepness should not exceed one foot in twelve.

(21) Repair old gravel roads which have a hard centre, but too little crown, and which have high, square shoulders, by cutting off the shoulders, turning the material outward across the ditch if necessary, and placing new gravel or stone in the centre of the road. Do not cover the old gravel foundation with the mixture of earth, sod and fine gravel, of which the shoulders are composed. The shoulders can most easily be cut off by means of a grading machine.

(22) Roads of importance should be about twenty-four feet in width, between the inside edges of the open ditches, with the central eight feet gravelled or metalled with broken stone. Roads of least travel should not be less than eighteen feet in width.

(23) Wherever water stands on the roadway or by the roadside, or wherever the ground remains soft, or is swampy in the spring and fall, better drainage is needed.

(24) Look over the roads after heavy rains and during spring freshets. The work of a few minutes in freeing drains from obstructions, or diverting a current of water into a proper channel, may become the work of days if neglected.

(25) Surface water should be disposed of in small quantities; great accumulations are hard to handle and are destructive. Obtain outlets into natural watercourses as often as possible.

(26) Instead of having deep, open ditches to underdrain the road, and dry the foundation, use tile.

(27) Give culverts a good fall and free outlet, so that water will not freeze in them.

(28) In taking gravel from the pit, see that precautions are taken to draw only clean material. Do not let the top of the pit be scraped down, mixing clay, sand and turf with good gravel.

(29) Gravel which retains a perpendicular face in the pit in spring, and shows no trace of slipping is generally fit for use on the road without treatment. Dirty gravel should be screened.

(30) Plan and lay out the work before getting the men on the ground.

(31) When preparing plans keep the work of succeeding years in view.

(32) Have on the work such number of men and teams as can be properly directed, and kept constantly at work.

(33) In laying out the work, estimate on a full day's work from each man, and see that it is performed. Specify the number and size of loads of gravel to constitute a day's work. Every wagon box should hold a quarter of a cord.

(34) Make early arrangements for having on the road, when required, and in good repair, all implements and tools that will be needed.

(35) Do not work on the roads when they have became wet and unfit, by protracted wet weather.

(36) Do all work with a view to performance and durability.

STATUTE LABOR NOT ECONOMICAL.

The principal item of cost in road construction is for labor, either of men or teams, not the implements used nor material employed. A gravel pit, stone quarry, rock crusher, road roller or road grader, is more or less expensive, yet this expense is distributed over a term of years and a long road mileage, and the cost per mile is proportionately small. Yet every mile of road demands its own quota of men and teams for grading, draining, hauling and spreading gravel or broken stone, preparing the gravel or crushing the stone. One of the first principles of cheap road construction is, therefore, economy in labor.

The question therefore naturally arises, "Why is not the statute labor system the cheapest method of improving the roads?" "Here we have labor almost as a gift. Why then does this not result in economical road work.?"

The answer to this question cannot affirm that statute labor has been of no use on the roads. On the contrary statute labor has done much for road improvement in Ontario. Under pioneer and even later conditions, it was no doubt the best system that could have been adopted. Under circumstances favorable to statute labor, money was exceedingly scarce; men were working anxiously in the forest to clear their farms, population was scattered, the need of roads was keenly felt by all, the work of roadmaking consisted of clearing the allowance, removing roots and stumps, grading and ditching. Men who have grown up with the country from such conditions have worked faithfully and earnestly in the performance of their road work, and statute labor has, and in some sections, is still producing good results.

But conditions have changed. The land is cleared, farm labor is scarce, agriculture is being placed on a more business-like basis, and every farmer needs all his time on his own property. The introducing of labor saving machinery has placed the land owner in an independent position. He is able to do his own work, and pay for necessary assistance. Co-operative labor, in the form of "bees" is no longer required.

The old incentive to cut a road through the forest has passed away. The work of clearing the road allowance, taking out stumps, even much of the grading and ditching has been done. A better class of road is being demanded requiring experienced workmen. Road machinery is being introduced requiring skilled workmen to operate it, and doing away with much of the hand labor in roadmaking for which statute labor was better suited.

It can be safely stated that, under existing conditions, there is not a township in the Province in which statute labor is faithfully performed in every road division. In the great majority of townships, where statute labor

is retained, not 75 per cent. of the road divisions do their work in a reasonably faithful manner. Instead, many men appear to think that, under the statute labor system, a road can be made by looking at it, or talking about it. The men who do their work honestly, have to suffer the injustice of using bad roads, and being taxed in money to repair them, because so many of their neighbors, and so many other divisions, neglect their duty in this respect.

Men come to the work improperly equipped. Their wagons seldom hold a reasonable load, yet it takes little longer to haul a load of one and a half cubic yards of gravel to the road, than to haul half a cubic yard. In this way, on teaming gravel alone, fully 75 per cent of the statute labor can readily be lost. Men come to their work late, and leave early, so that, in the performance of statute labor, a six or seven hour day is more common than ten hours of work.

Under the statute labor system, a great many more road overseers are appointed, than are necessary, and the time of these is wasted in going to the

Good work with a Grader—near Orillia.

township clerk's office to qualify for office, in calling out the men on their road list, in acting as foremen on the work. These men are changed from year to year, are seldom selected because of special qualifications for road work, and cannot be expected to produce the results that a man can, who is making a special study of roadmaking, and who devotes his whole time to it season after season. Through lack of experienced direction a great proportion of the labor is lost.

Under statute labor, with new pathmasters from year to year each particularly interested in the road passing his own farm, roadwork is not performed systematically. It is done in a temporary manner, and is more a series of repairs, than an effort at durable construction. In the absence of a plan to be followed from season to season, the work of one year is frequently rendered useless by the work of the following. New pathmasters have new ideas as to how wide a road should be graded, how high the crown should be, how deep a drain should be dug, where it should have its outlet, where a culvert or bridge should be, etc., etc. By an absence of system in planning the work, much labor is lost.

Work is not done where needed and at the proper time. Statute labor is all done at one season of the year, whereas roads need attention and repair at every season. It is a fundamental requirement of economical road maintenance, that repairs should be made as soon as signs of wear appear. When a rut or depression first appears in the road it should be filled. When a drain or culvert becomes clogged, it should be freed from the obstruction. When a road commences to flatten out, the metal should be drawn in to raise the crown, or a new coating applied. When stones work to the top and form a rough surface, or roll loosely under the wheels, they should be drawn away from the roadway. A rough, rutted road wears out much more rapidly than a smooth one does. When wagon wheel after wagon wheel supporting a ton in weight sinks into a depression on the road, or drops from a stone rising above the wheel track, the surface is soon cut through and serious injury to the road results. The work of a few minutes when repair is first needed, becomes the work of as many hours when neglected, and from this cause much labor is wasted.

A discussion of the many ways in which statute labor under existing circumstances is wasteful in this the chief item of cost in roadmaking might be continued at much greater length, but sufficient has been said to show why it is that so many townships are, with so much success, replacing it with more business-like methods.

The defects of statute labor may be pointed out, and traced to their several causes: but apart from these, statute labor must be dispensed with because a better system is available. The flail is no longer used because the steam thresher has been invented. The cradle is no longer employed because the self-binder is better. Wheat is not now sown by hand, because the seeder cheapens the work. And so statute labor is no longer suited to roadmaking, because a better method has been devised.

Numerous townships of the Province have found that, by doing away with the actual performance of statute labor, and substituting a system which provides for greater economy of labor, very much better results can be attained. The general experience is that, where statute labor is commuted at from 50 cents to 75 cents per day, the funds so created can be expended to much greater advantage, than if the entire amount of statute labor is worked out in the ordinary manner.

COUNTY ROADS.

County road systems are steadily growing in favor throughout the Province and have now been adopted in Wentworth, Simcoe, Lanark, Oxford, Hastings, Wellington, Lincoln and Victoria, while the counties of Essex, Elgin, Brant, Perth, Dundas, Stormont, Glengarry and others are actively considering the matter.

The Act under which these county road systems are now managed, is known as the Provincial Highway Improvement Act, and with its amendments provides that county councils assuming and maintaining such a system will be assisted by the Provincial Government to the extent of one-third of the cost of construction. The following schedule shows the mileage of the

several county systems, the expenditure thereon under the Act during 1903 and 1904, and the amount of Provincial aid granted:

County.	Year of Commencement under 1 Edw. VII., chap. 32.	Mileage.	Expenditure under Act 1903-1904.	Government Aid.
Wentworth	1903	150	$130,866 84	$43,622 28
Wellington	1903	170	21,554.04	7,184.68
Simcoe	1903	427	185,929 80	61,976 60
Lanark	1903	98	42,984.45	14,328 15
Oxford	1904	271	53,034.81	17,678.27
Hastings	1904	472	16,813.05	5,604.35
Lincoln	1904	36	6,061.50	2,020.50
		1,624	$457,244.49	$152,414.83

It is not to be expected that county systems will be rapidly adopted throughout the Province. It must be largely a matter of growth. Municipalities are notably conservative with respect to systems of road management. The statute labor system has remained almost unchanged for more than a century, in spite of its many defects and the manifest advantages that would arise by adopting more suitable township systems. It is, therefore, a matter of much promise that so much progress has already been made.

General Features.

Briefly, the general features of the plan are as follows:

(1) A county system may be adopted by a county council if not more than one-third of the township councils are opposed; or in case of the disapproval of more than one-third of the township councils, the question may be submitted by the county council to a vote of the ratepayers.

(2) The roads assumed by the county council are selected by mutual agreement of the county and township councils.

(3) These roads need not form a connected system but it is generally desirable that they should do so. They are usually what are now the most heavily travelled roads, leading to the different market towns.

(4) The work to be done on these roads is decided by the county council. Fixed specifications are not prescribed by the Government. The regulations of the Public Works Department merely require that whatever work is done, whether grading, draining, gravelling, etc., shall be done in accordance with right principles and with a view to economy and durability. Expensive work is not demanded.

(5) The work and expenditure is carried on wholly under the direction of the county council, and the road superintendent or superintendents appointed by them. A Government engineer is not placed in charge of the work. Such inspection as is made by the Department is with a view to assisting and advising the county councillors and road superintendents.

(6) The county road superintendent need not be a civil engineer; although civil engineers are especially qualified for the position. The county council is at liberty to select any responsible local man whom they consider competent to direct the work.

(7) The amount to be spent on the roads is fixed by the county council. It need not provide for a greater expenditure than is already being made on the roads. The work need not be done in one year, nor in a fixed period, but may be carried on from year to year, as the council considers expedient.

(8) At the end of each year the county council presents to the Government a general statement of the work done, and amount expended. This should show that the expenditure has been confined to the roads named in their by-law, and covers work of construction only. It should be accompanied by the report of the county road superintendent, and certificate of the county treasurer. When these reports are presented to the Government, there will be forwarded to the county treasurer a cheque for one-third of the expenditure.

(9) The expenditure may include the cost of toll roads hereafter purchased by the county and included in the county road system, also the cost of road machinery.

(10) If for any reason, roads are not assumed in certain townships, as part of the county system, there may be returned to these townships by the county council the amount they contribute to the fund, together with their share of the Government grant; such sums to be spent by the township councils on road improvement.

(11) The county council may make grants to towns and villages that are assessed, but have no part in the county roads. These grants are expended upon such streets as are agreed upon betwen the county and town councils.

(12) The amount spent on the county roads may be raised in the ordinary manner as required from year to year; or the council may issue debentures extending over 30 years; the total amount of such debentures not to exceed two per cent. of the equalized assessment of the county.

The Government Pays One-Third.

The Act as originally passed in 1901, provided that the amount of $1,000,000 would be distributed among the various counties in proportion to their assessed area. By amending Acts of 1904 and 1905 this restriction has been done away with, and it is now provided that the Government will pay one-third of the cost of constructing a system of county roads, whatever the expenditure may be. There are certain counties in which road construction is comparatively easy and inexpensive owing to the general character of the soil, and the uniform distribution of gravel or stone. But, on the other hand, there are counties, such as Kent, Essex, Welland, in which there is very little good roadmaking material, where the land is flat and the roads difficult to drain; in other counties of the eastern part of the Province broken stone is the only material available for roads, and the cost is correspondingly great; also there are other counties in which roads of a particularly expensive kind have to be constructed to accommodate unusually heavy traffic. In such counties, where, for any reason, the construction of the main roads is expensive, any sum less than one-third of the total cost of construction would not be an inducement to the undertaking of the improvement of a system of main roads.

It was therefore felt by the Legislature that the basis upon which Government aid should be granted was the cost of the work. This is the basis in all of the states where state aid for roads is granted. Restrictions based on area or assessment are foreign to the needs of road improvement, just as they are foreign to any other public work.

The Legislature at the last session therefore by an exceedingly satisfactory amendment, provided that the Province contribute one-third of the

cost of construction. Any unwise or excessive expenditure is fully guarded against by the provisions of the Act, which require that the county council shall provide two-thirds of the outlay, also that each county system shall be approved by the Lieutenant-Governor-in-Council, thus guarding against an excessive road mileage, while the class of work is subject to the approval of the Highways Branch.

A County Act Only.

The Act has, by a recent amendment, been made to apply to county systems only. The section of the Act which formerly provided that, where a county council failed to assume a county system of roads, the townships might participate in the grant, has interfered with the adoption of county ful in improving the roads, and, when generally established, will lead to a systems. County system, wherever adopted, have been exceedingly successtransformation of the roads of the Province. County councils will have only the one limited system of roads to construct and maintain, which they can do in a uniform manner, spending enough on them year after year to keep them in repair; whereas expenditure for maintenance by township councils would be opposed until an equal expenditure had been made on all the roads of the municipality, thus allowing the improved roads to deteriorate. Township systems would be local, and would not connect with the main roads of adjoining municipalities, as county systems now do, while the grants made to townships would benefit too short a mileage of road to be of more than temporary value. County councils can provide a better outfit of machinery to construct and maintain the roads. For these and other equally important reasons it was felt that the objects of the Act would be efficiently served through county systems only.

Not an Expensive System.

The Act does not necessarily propose a large or even an increased outlay by the ratepayers. New roads are not created. The roads to comprise the county road system are what are now the most heavily travelled roads maintained by the townships. To combine the more important roads in one class under one management, with proper methods and tools for dealing with this special class of work, is a measure that will reduce the cost rather than increase it, and it will at the same time produce a better class of roads.

An increased expenditure will no doubt be made, but this will be fully covered by the Government grant. Township councils will thus be able to devote greater attention to the roads of less travel, many of which are now neglected because the heavily travelled roads (which will be taken over by the county) are absorbing all the possible expenditure. By this system the main roads receive better attention from the county councils, and the remaining roads receive better attention from the township councils. All the expenditure placed on roads will be spent in the several townships, and returned, in a great measure, to those who contributed in the first place, together with the Provincial grant.

The county system will comprise but a small percentage of the total road mileage. A well-kept, not a long county system, is most desirable. The aim is to secure uniform and systematic work, to employ and properly operate modern and economical implements, to provide careful, constant, and methodical supervision and maintenance; to provide object lessons in the care and treatment of roads, and set examples for those having charge of the remainder.

A County Conference.

A county conference of all county, township, town and village councillors, and others interested, has usually been one of the first steps towards taking action under the Act.

At these conferences, the majority of which have been, by the request of the counties, attended by the Commissioner of Highways, the meaning and intention of the Act have been explained, and to some extent a plan of roads considered. A second conference has then been called to further discuss the details of the proposal before any well-defined plan has been reached. When this has been done, it rests with the county council to prepare a by-law definitely laying down a system of county roads. After having been given its second reading a copy of this is sent to each township council within the county, and they have three months in which to consider it.

The Act requires that each council will, within the three months, report to the county council their acceptance of the plan, their rejection of it as a whole, or such alterations in the system of roads as would meet their approval. If a township wishes roads taken other than those proposed by the county, in case of failure to agree, the matter will be submitted to arbitration. If more than a third of the municipalities oppose the by-law as a whole, the question must be submitted to a vote of the people. If the by-law meets the acceptance of the municipal councils, or two-thirds of them, the county council may finally adopt it and proceed with their plans for the improvement of the roads.

Councils Have a Free Hand.

The highways to be assumed as county roads, the distribution of the expenditure upon these roads, where the work is to be undertaken, and similar details of management, are left wholly to the judgment of the county council and the municipalities interested. The actual improvements may be placed wherever they will be most serviceable and effective in bettering the condition of the roads, and the distribution of the expenditure must, therefore, be governed by local circumstances.

The Main Market Roads.

The roads to be assumed must not be confused with any previous county systems which have existed, many of these having become of secondary importance, owing to the building of railways and the growth of new local markets. Only those roads should be selected which can make good their claim to being still the roads of greatest travel. This is a matter which county councils, with the advice of township councils, will undoubtedly view from a county standpoint, and by them the best possible selection will be made, so that it is not a matter upon which the Act places any restriction.

The roads to be assumed under a county system should, however, be those which are most used by the public, and which will best serve the requirements of the people in each section. One road in each township, or several roads, or part of one road, or parts of several roads, may be selected. As a general thing, they should consist of what are now the most heavily travelled roads in each township leading to the market town or village of the district.

It will be of advantage in most cases to have the roads connect and form a continuous system of county roads, but it is not necessary that they should do so. In some counties the trend of travel is all in one direction, leading to one market centre. In other counties the trend of travel is divided by a number of district centres. Nor is the trend of travel marked by county or

On the County Roads of Simcoe—A cut near Penetanguishene.

township boundaries, but divided according to local conditions. The most important factor in determining the line of travel is, as a rule, the nearest or best market. These circumstances must be all taken into consideration in framing a county system of roads, and the aim should not be so much a connected system as a useful one. What has been done would indicate that the county system of roads has been made to comprise about one-tenth or one-fifteenth of the road mileage within the county, but these have been selected wholly with a view to local markets and the trend of travel.

Statute Labor Along County Roads.

Statute labor assessed against property along county roads, belongs to the townships so long as it is worked out in the ordinary way or is commuted under a general township by-law. By the Amending Act of 1905 township councils may direct that the statute labor from lands along county roads be commuted, and the amount paid over to the county, to be applied in repairing the roads, removing snow, and keeping them open in winter. The matter of keeping snow roads open in winter is of serious difficulty in certain parts of the Province, and of much importance to the community affected. In any event, it is manifest that the commutation money from lands fronting on the improved roads may properly go to assist in the maintenance of the county roads; but this is a matter for the townships to determine.

Grants to Municipalities Not Benefited.

Most counties, and the councils of the various municipalities, agree as to the general principles of a county road system and the benefits that arise therefrom. But certain details in adjusting a system to meet the local circumstances in a few cases appear to create the chief difficulty in the acceptance of a county system of roads. To meet such cases, the Act provides that the county council may make a specific or an annual payment to township councils not benefited by the proposed county road system, to reimburse them, wholly or in part, for the amount they pay annually to the county road fund. The county council may also make grants to towns and villages in certain instances.

Towns Should Assist.

Only through a county system can towns and villages assist in the construction of county roads. Country road building is a public work of great magnitude and expense, and if left solely to the farmers it must be years before the condition of the roads is sufficient for the complete development of the country's resources.

The residents of towns know how important it is to have free and uninterrupted communication with the surrounding farm districts at all seasons of the year. If the farmer must come over the roads to the centres of population and the railway station to dispose of his farm produce, it is equally important that he should use the roads to draw the merchant's goods back to the farm. Country roads are nearly if not fully as much benefit to the townsman as to the farmer. Because the farmer provides the wagons and teams and does the driving, it does not follow that he should pay the whole cost of the roads as well.

The progress of the towns in every agricultural district is dependent upon the progress of the country. The town is the product of the country. The towns, as a matter of self-interest, should accept their portion of the task of improving the country roads.

There can be no question as to the justice of requiring the towns and villages to contribute towards the cost of this work. Towns and villages are benefited by the improvement of the country roads approaching them, and the county should not hesitate to assess them. It is not the intention that any considerable portion of the money should be spent in the towns, but that it should be spent in the townships. The county has to raise two-thirds of the total amount, but such a percentage of this will, in the average county, be contributed by the towns as to make their contribution, together with the Government grant, equal to about one-half of the cost of the work. Taking the Province as a whole under the county system, for every $1.50 spent on constructing the roads, the Province pays 50 cents, the townships 78 cents, the towns and villages 22 cents.

Standard Required.

An elaborate method of road construction is not required. The intention is that local material shall be used. If, as in some counties, there is practically no local gravel or stone, councils may follow their own judgment as to whether they will put metal on the roads, or will merely maintain the ordinary earth roads to the best of their ability. In extreme cases, the plan of councils would probably be to build a few miles of good road each year, bringing the stone or gravel in by rail, and gradually extending the work until the entire system is brought to a good condition for main roads.

Regulations have been prepared by the Highways Branch of the Public Works Department, to be followed by councils, but these are not unalterable. They are to help, not hinder the work of road improvement. Such examination of the work as is made by the Highways Engineer, is with a view to helping councils, rather than inspection in the ordinary understanding of the term. It is desired that the services of the Highways Branch will be advisory rather than merely inspection.

The regulations referred to in Section 6 of the Act, are therefore, very general, as follows:

All road improvement under the provisions of 1 Edward VII., Chapter 32, is to be done under a capable commissioner appointed by the council.

A plan of the roads to be improved, a report as to their present condition, and approximate amount of travel over them, specifications showing what work of improvement is to be made, together with an estimate of the cost, will be submitted to the Highways Branch for approval. The improvements must be of a character suited to the requirements of the locality, and may consist of: (a) Resurfacing and substantial repairs on old gravel or stone roads; (b) Draining and grading the roads; (c) Draining, grading and gravelling the roads; (d) Draining, grading and metalling the roads with broken stone. The plans and specifications shall, as far as practicable, provide as follows:

1. The steepness of hills should not exceed a rise of one foot in twelve.

2. The roadway graded for traffic should be in the centre of the road allowance, and should have a uniform width of 24 feet between the inside edges of the open ditches. The width of the roadway on cuts and fills should not be less than eighteen feet.

3. Side slopes in cuts and fills should be one and one-half feet horizontal to one foot vertical.

4. The crown given the newly finished roadway should be uniform, and have a rise of one inch to the foot from the edge of the ditch to the centre of the road.

5. When gravel or broken stone is used, it should be placed to a width and depth sufficient to form a serviceable road, having due regard to the character and extent of the traffic.

6. The gravel or broken stone used on the road should preferably be obtained in the vicinity of the road, but must be of good quality.

7. As a rule the gravel or stone should not be of a less width than eight feet, nor of a less depth in the centre than nine inches.

8. Where roads have heretofore had gravel or broken stone placed on them, they should be repaired by cutting off shoulders, shaping with a grader, and adding a sufficient amount of gravel or broken stone to fill ruts, depressions, properly crown and make a road sufficiently strong to accommodate the travel.

9. The gravel or broken stone placed on any road should be thoroughly rolled, otherwise the grade should be maintained by careful raking or scraping until compacted by traffic.

10. An open drain should be made at each side of the road, and given a sufficient fall to a free outlet.

11. Durable sluices and culverts should be built when necessary.

12. Tile underdrains should be laid, so as to carry away excessive subsoil water, lower the water-line, and secure a dry roadbed wherever a moist, damp, or springy condition of the sub-soil exists.

13. Modern machinery and implements should be used, as far as possible, to secure the greatest results from the expenditure, and to provide the best work.

14. Where, owing to special local conditions, any departure from the foregoing regulations may be desired, upon application of the council, an examination of the road or roads in question will be made, free of charge, by an engineer of the Highways Branch for the purpose of deciding upon a suitable plan.

COUNTY ROADS IN HALTON.

A number of road conventions have recently been called by county councils throughout the Province. These are productive of much good. The road question is one which has been misunderstood in many particulars, and in no particular more than in reference to the Provincial Highway Improvement Act, granting one third of the cost of work done on county systems. We therefore reprint the following report of a recent convention in Halton County, in which certain details are given emphasis:

"The response to the invitation of Warden McGibbon to the members of the municipal councils of the County to attend a convention in Milton on Tuesday, to discuss the advisability of adopting a scheme for the construction by the County Council of good roads on the leading highways of the County, was the most representative gathering of municipal councillors ever held in Halton. Every town and township in the county was represented, and in several cases the entire councils attended in a body.

Warden McGibbon took the chair at two o'clock and after stating the object of the gathering and expressing the pleasure he felt in meeting so many of the select municipal representatives of the county, he called upon Mr. A. W. Campbell, Ontario Commissioner of Highways, to address the meeting.

Mr. Campbell emphasized the need for the adoption of a new system for the construction of leading roads throughout the county, and explained that if the building of a system of good roads is undertaken, the Provincial Government will recoup the County to the extent of one-third the entire cost. The change in conditions the past five years had necessitated the abandonment of timber and plank for sidewalks, bridges, culverts and sluice-ways, and everywhere in the older sections of the country these have been discarded for iron and cement. The old method of building and maintaining roads by statute labor has become unsatisfactory, especially so far as the much travelled roads are concerned, and many counties have adopted the county road systems under the good roads statute. Among these Oxford County has, as a result of local efforts to create and maintain systems of good county roads, received from the Provincial Treasury, $18,000, Simcoe $62,000, Wentworth $44,000, Wellington $7,000, Lanark $14,000, and a number of others similar sums.

Crushing Stone in Collingwood.

According to reports furnished the Department the municipal councils of Halton have in the past ten years expended $139,000 in cash and 153,566 days of statute labor on the roads of the County, an equivalent of $300,000 or over $600 a mile. Where the money has gone "goodness knows" for all present will admit the roads of the County are no better now than they were before this large expenditure ten years ago.

The sturdy pioneers of this good old county laid splendid foundations for good roads, the present generation should complete their good work by unitedly and systematically surfacing these good foundations. The trained and experienced municipal councillors present realize the need, and are being shown how this may be accomplished without any large cost to the ratepayers.

Mr. Campbell went on to show that the Government is willing to pay one-third the cost of the construction of the roads most travelled and lead-

ing to the larger towns in the various sections of the county, without any exacting or unreasonable considerations. The county council adopts the system, the roads to be improved are designated, the by-law is prepared, the system submitted to the township councils for their approval; and the work is inaugurated. The county council does the work under its own supervision; not in an expensive manner or under harassing specifications of the Government. They make their own specifications. Where broken stone is desirable to be used they use it; where gravel is convenient, they adopt it. The surfacing of roads to ensure a good roadbed and proper drainage is what is required. At the end of each year the county treasurer sends a declaration to the Public Works Department, showing the number of miles of road constructed, the location of the roads thus improved, the total cost of the work, and a cheque for one-third the amount is forwarded to him in due course. The good roads statute permits the expenditure of monies for road machinery, such as stone crusher, steam road roller, graders, etc., and pays one-third the cost of these under this system.

It is estimated that 100 miles of good roads built under the county system would amply meet the wants of Halton. The construction would probable require ten years to accomplish, working two or three miles out from each town per year. The cost would be from $75,000 to $100,00, less one-third to be paid by the Government, and the debentures would extend over a period of thirty years. The taking out of the 100 miles from the townships would reduce the expenditure of the township councils on their roads by a considerable amount, almost sufficient it is believed to meet the principal and interest on the debentures. In fact Mr. Campbell assured the convention that no additional taxation will be required to successfully secure good roads by this system.

Mr. Campbell commented very favorably on Acton's proposed expenditure of $6,000 for good roadbeds on the principal streets, and said when the work is done this town will be able to show model roadways on its streets.

Dr. Buck, Reeve of Trafalgar, said it was very much to our interest to have good roads in Halton. If the scheme is adopted Trafalgar Council will not defeat it, though with the present large expenditure of the township for steel bridges and cement culverts the present time for building good roads seemed rather premature.

Reeve Alton, of Nelson, was emphatically in favor of the system of county roads and was backed up by his council. He was inspired and felt that all present must be by Mr. Campbell's able address. If the system is adopted the township councillors can give their time to improving roads leading up to the county roads.

Councillor Warren, of Acton, was in favor of county roads, and especially if the county secures such roadmaking machinery as was proposed, and which could be secured by the towns for a week or so each season for improvement of their streets.

Reeve Mahon, of Nassagaweya, was proud to say that for the most part Nassagaweya now has superior roads, but the council will not oppose the system proposed.

Councillor Shields, of Oakville, said that his town council at a meeting the evening previous had declared itself emphatically out for good roads.

Reeve McGibbon, of Esquesing, said the roads cannot be improved by the statute labor system. If the county roads plan can be accomplished without increased taxation, he was heartily in favor of it.

Mayor Higginbotham, of Milton, said Milton will do its share to make the scheme successful, and Milton has now the muddiest roads in the county. The towns of the county would, he felt, favor the system.

County Councillor Cook was delighted to meet such a splendidly representative body of the councillors of the County. He spoke at length in most emphatic terms in favor of the county roads system, and said, after visiting Wentworth and riding over its roads built under the system, he would willingly give $1,500 to have his farm situated on a road of the excellent character of the Wentworth roads. While he could never have his farm on one of the leading roads proposed for Halton, he was very anxious to have the scheme adopted for the general good of the County.

Councillor Wallbrook, of Trafalgar was in favor of good roads, and especially after Mr. Campbell's lucid explanations, but he felt that Halton needed as well an electric road to run through the centre of the County, say from Oakville, touching Milton and thence to Acton. In this electric age this could readily be accomplished, and if such a road were constructed it would not only be a profitable venture, but would be a boon to the people of the County generally by providing a new market for produce at every switch put in throughout its course. It could also tap Esquesing's gravel pits and Nassagaweya's stone quarries and take out material for constructing the good roads at the front of the county where materials are scarce.

County Councillor Near made an open confession. He had come to the convention entirely opposed to the system of county roads. After hearing Mr. Campbell's splendid explanation of the plan he was thoroughly converted to it, and would now give it his support.

This highly interesting convention closed with a cordial vote of thanks to Commissioner Campbell and Warden McGibbon moved by County Councillor H. P. Moore and seconded by County Councillor R. D. Warren."

LANARK COUNTY ROADS.

The Lanark County road system, on which work was first done in 1904 comprises in all 98 miles of road, including about twenty miles of toll road purchased by the County in 1903 and freed from tolls.

The roads purchased from the toll road companies were, for the most part, in good condition, having been well macadamized, and kept in fair repair. Of the other roads designated as part of the County system, about thirteen miles have been gravelled or macadamized during the past season (1904); so that one-third of the system is now constructed in a durable and efficient manner.

At the outset, difficulty was encountered in procuring men experienced in roadmaking to take charge of the improvements. As it became apparent that local men would have to be trained for the work, it was decided to proceed slowly, and to do the year's work under one commissioner, rather than to follow the more expensive plan of training two parties of men the first season. For next year, if desired, foremen can be selected from those who have had experience this year.

The principal stretch of road treated, is one running westerly from Carleton Place to Innisville, where a distance of seven miles has been graded, drained, and metalled with gravel and broken stone. In addition to this, there are a number of shorter stretches of work, on other roads of the County. The general plan has been to first plow up the sides of the road, then to round or crown the roadway with a grading machine, to an average

width of twenty-four feet, from water-table to water-table. In doing this work the curve of the roadway falls regularly to the bottom of the side drain, so that the necessity of excavating a drain by hand is overcome, and the entire earthwork is done by machinery. On the centre of the grade thus formed, the gravel or stone is evenly spread to a width of eight feet, and a depth of six inches. A roller is not used in this work, but as a partial equivalent, care will be taken to draw the metal back, and to level the roadway when wheel tracks have formed.

While this is the general plan, it has been interrupted to a considerable extent by outcropping of bed rock on the surface of the roadway, and numerous large rocks and boulders on the road allowance. It was regarded as of prime importance to provide free and constant surface drainage, and in opening the side drains a large amount of rock had to be blasted and removed. The amount of rock-work necessary has therefore tended to increase the cost of road construction. Numerous hills and knolls have been cut down, and where these have been of rock, the cost has also been greater than for ordinary work. The amount of rock piled at the roadside is, in many cases, forcible testimony of the amount of work done. The rock removed is of variably quality , some being the hardest of granite and in other places, a tough blue limestone.

Where gravel of a suitable quality could be had within a convenient distance it was used on the roads; but where it could not be obtained within about two miles, crushed stone has been employed. The gravel is, as a rule, somewhat fine, for best wear, but is inclined to be gritty rather than earthy. In most cases, the pits are located on, or adjacent to, the roads constructed.

Broken stone has been used on only one section, near Carleton Place. The stone is a hard, blue limestone, of a good quality, breaking well, into cubical, rather than flat fragments. The stone is broken in a crusher belonging to the County, and was purchased last spring.

The crushing outfit consists of a 17 horse-power engine; a wagon equipped with a water-tank; a crusher which will turn out from ten to twelve cords per day, a rotary-screen attachment, and bins and shutes to receive the stone and carry it to the wagons. The county uses two special dump wagons for hauling stone. Additional road-making machinery owned by the County consists of a grader, wheeled and common scrapers, pick-plow, and minor implements.

The entire roadwork of the County system is under one overseer, and foremen have been employed by him on the smaller works, which he could personally superintend. In addition to the main works near Carleton Place, are scattered stretches of from one to two miles each in other parts of the County. A camp outfit was employed by the superintendent on his own work, in order to keep the men close to the work. The camp comprises half a dozen tents for horses and men, and this was moved to convenient points along the work from time to time. The usual wages were $1.25 a day with board for labor, and $2.50 a day for man and team, the teamsters supplying oats and the township providing hay for their horses.

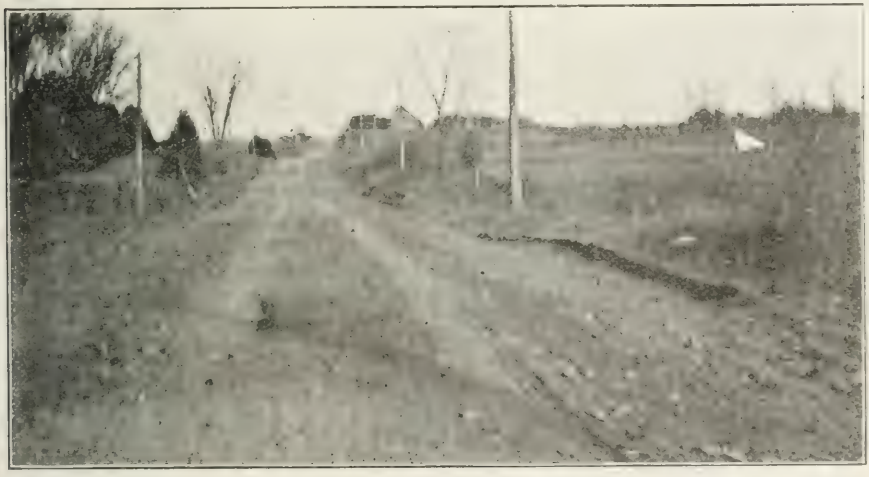
In several cases the road allowance has been straightened or changed to a more suitable location, while throughout there has been an effort to bring the travelled roadway to the centre of the road allowance. The roads assumed by the County were among the most heavily travelled thoroughfares, but at the same time, among the most neglected within the County. In many instances they are trespass roads, narrow, as is usual in

such cases, but following the high land, avoiding serious grades, and in other respects being in the most favorable location.

Near Carleton Place, a considerable amount of stone has been quarried from rock out-croppings in the road allowance, thereby reducing a difficult grade, and supplying stone with a minimum haul. The cost of constructing these roads ranges from $400 a mile for gravel roads where there was little rock excavation, to $900 a mile for broken stone roads, where there was a considerable amount of rock to be removed in the construction of gravel roads. With this year's experience, the work of next season (1905) can no doubt be performed more perfectly and at reduced cost.

Montague and South Elmsley.

Owing to local considerations, provision was made in the road by-law that no roads be assumed in the townships of Montague and South Elmsley as part of the County system, but that instead, grants be made to these townships equal, as nearly as possible, to their contribution to the County



New Gravel Road in South Elmsley.

road fund, together with the Government grant. The amounts thus to be paid to Montague and South Elmsley were $7,160 and $4,000 respectively, these grants to be expended on road construction in accordance with the regulations of the Highways Department; these roads, however, not to form part of the County system.

The township of Montague has constructed about ten miles of road, two of which are gravelled, the remaining eight metalled with broken stone, expending thereon, approximately $8,000, and purchasing, in addition a rock crusher with a rotary screen attachment, engine, two dump wagons, and other machinery to the value of $3,400. The capacity of the crusher is guaranteed for 75 cubic yards in ten hours.

The general plan followed was to grade the roads with the grading machine in the usual manner. On the grade so formed was placed a bed of quarry refuse, consisting principally of the smaller stones produced in blasting. On this was spread a layer of finer crushed limestone.

It was intended to roll the roads as thus formed, but the only roller available being found too heavy for the work, the roads were finished by

spreading over the broken stone, a layer of screenings. In the interval, however, before the screenings were put in place, the roads were somewhat worked up by traffic, the larger stones of the quarry refuse coming to the surface. By the end of the autumn the stone had settled to some extent, and a fairly smooth surface was beginning to form.

The wheel tracks on the roads constructed in this way, cannot well be filled by use of the grader, without again making the roads very rough; but a substantial basis has been formed, and with proper care, by raking in the wheel tracks, breaking or scraping away loose stones, and, if possible, again applying a light coating of fine broken stone, excellent results should be reached. The grading of the road, surface drainage, and quality of stone used are, as a rule, satisfactory. The roads constructed in this way, are among the most important in the township, radiating from the market towns of Smith's Falls and Merrickville. It is the intention of the Council to ultimately construct all township roads in a similarly permanent manner.

Work in the township of South Elmsley has been somewhat delayed, and the principal piece of work, was a gravel road nearly two miles in length in front of the 7th and across the 6th concession of the township, adjacent to Smith's Falls. The road has been well graded, crowned, and drained. The gravel used was not of the best quality, having a considerable quantity of earthy matter. A 6-ton road roller was used in finishing the road, but not on the earth sub-grade. Owing to the continued dry weather, the rolling was not so effective as it would otherwise have been in consolidating the road. The cost of this work was approximately, $900, and $50 additional for a gravel pit.

Work was commenced at another point in the township, on what is known as the Ferry Road. Stone was quarried and a small quantity crushed and placed on the road, but none of the work was finished. The work, so far as it was carried, is along proper lines, but in its unfinished condition, it may be expected to rut considerably under the traffic of spring.

This road is subjected to frequent travel throughout the summer, leading to a summer resort on Rideau Lake, and its improvement is matter of more than local benefit. It shows evidence of a very spongy condition and its permanent improvement can only be effected by thorough drainage. When the work is continued, and before placing the broken stone, the road should be well graded and crowned to provide fully for settlement, and at spots of particularly spongy nature, underdrains of porous field tile should be laid to carry away sub-soil water. These spongy points are in evidence that mud beneath the road is much more destructive than mud on the surface. To the present only about $250 has been spent on this work.

In general, the roads of the County and townships show painstaking work, and a conscientious effort towards permanent improvement. Numerous hills have been cut down, involving in cases considerable rock excavation, so that no grades on the roads inspected, will exceed that required by the Departmental regulations.

The use of roadmaking machinery has tended to economical and efficient work, although in addition to the implements now used, a road roller with which to consolidate first the earth sub-grade, then the layer of gravel or stone, would produce more immediate and durable results on the County roads. The crowning of the roads is, as a rule, good. In rare cases it is too high to provide for settlement and wear ; although in occasional instances a higher crown seemed desirable. The surface drains are uniform in align-

ment, and carried to free outlets. The roadway, as far as practicable, is placed in the centre of the road allowance, and the road allowance in several instances straightened. Good road metal has, as a rule, been selected, consistent with the cost and length of hauling.

SIMCOE COUNTY ROADS.

The county system of Simcoe, established in 1903, includes 427 miles of road. The management is largely vested in the county councillors, the warden acting as superintendent for the entire county; while for bridge work, an engineer is employed. Each councillor has general oversight of the roads in his district, but employs a foreman to take direct charge of the work. While this system of management has given good results, a permanent superintendent for the County, having constant oversight, would tend to unite the best methods of every district and overseer; would assist in the interchange of machinery; would consolidate the experience of a term of years, and tend to greater uniformity.

The machinery owned by the County consists of four rock crushers, twelve grading machines, four horse road rollers, a traction engine, four spreading wagons, a rotary gravel screener, and twelve wheeled-scrapers. In addition, the County has the use of the steam road rollers owned by the towns of Collingwood and Orillia.

Some portions of the system were examined in the vicinity of Barrie, Collingwood, Penetanguishene and Orillia. These portions were selected as being representative of the various sections of the County, and as indicative of the work being done on the whole county system. The foremen and commissioners in charge of the improvement, were interviewed and the methods and details of carrying on the work were discussed.

Barrie District.

The road leading from Minesing to Barrie is a fair representative of the roads in this district. This road receives a large amount of traffic of all kinds from the farming district to the west of the town. A good road was required for light driving as well as for market teaming. A considerable section of the road passed through a district of almost barren, sandy land, from which little statute labor had been received. In consequence the road was in a very unsatisfactory condition, and communication with Barrie was much impeded, as there were long stretches of sand road of a most disagreeable kind between the richer farming districts and the local market centre.

The improvement of this road was commenced at Barrie, and has been extended as circumstances permit, so that the greatest benefit has been received by all. In planning the improvement of this road, it was considered that the old grade was too wide. The road grader was therefore so operated as to make the driveway twenty-four feet between the centres of the water-tables. The grade was brought to the centre of the allowance, and many unnecessary twists and turns taken out of the road.

The open drains are well-defined, and lead to free outlets. They were formed, as a rule, by the careful use of the road grader, and very little hand labor was required on this portion of the work.

The sandy sections of this road were so light that it was evident that gravel alone would not form a compact bed. After grading, a layer of clay

was therefore placed over the sand, and on this, the gravel was spread. This has been entirely successful, and, after consolidation, has resulted in a strong and durable roadway which has stood, without any apparent settlement, the test of winter and spring traffic. Where, in a few spots, the clay was omitted, the gravel has yielded and does not bind as on other parts of the road.

Gravel is placed on the road to a width of eight feet, and a depth of eight inches in the centre. After being dropped on the road, it is carefully spread and, as soon as possible, is rolled with a horse roller. Rolling is always done after a rain when gravel will compact readily. This is found necessary, as rolling is not effective with a light road roller, when the gravel is not wet. Rolling is found to place the roads in a fit condition for travel at once, so that vehicles will use the centre of the road. If the gravel is left loose for traffic to consolidate, vehicles are inclined to cut up and rut the sides of the road, destroying the grade and injuring the surface drainage.

The hauling of gravel for these roads is distinctive from the usual township methods. A certain number of loads is specified for a day's work, according to the length of haul; each wagon is required to carry a yard and a quarter at each load; and care is exercised to reject any unsuitable material in the pit. In nothing is the difference from ordinary statue labor methods more marked than in the quantity and quality of material drawn.

Gravel pits were found close to the road, so that the cost of road metal has been reduced to a minimum. The gravel is of an average quality, although inclined to be a little fine. This is counterbalanced by the fact that it is clean, binds well, and is therefore compact and sheds the water.

A feature of the improvement of this road is the straightening of a portion whereby a deviation of about a mile is removed and an entirely new section opened along the original allowance. The new road crosses a ravine, and involved an extensive cut to reduce the grade to a slope of one in twelve. This is a permanent improvement for the general good that will benefit a large farming community.

The bridge in this ravine, with 16 foot roadway and span of 32 feet 6 inches, is of a model design. The abutments are of concrete and were built by contract for $262, the County supplying the gravel at the work. The abutments are twenty inches thick at the top, four feet thick at the base, 12 feet high, and 18 feet wide, with wing walls to suit the situation. The proportions were five of gravel to one of cement.

The superstructure consists of four 12 inch steel I beams, weighing 50 pounds per foot; a railing three feet six inches high of $1\frac{1}{4}$ inch gas pipe; and a concrete floor laid on expanded metal.

The floor is from four to five inches thick made of five of gravel to one of cement, with a one-inch surface of one of sand to one of cement. This is reinforced with expanded metal.

The steel and expanded metal in the bridge cost $469. The floor was laid by day labor for 13 cents a square foot or $81 in all, including $12 worth of lumber used as a temporary form in construction. The total cost of the bridge, which is a good sample of durable workmanship, was $825, including all contract work, extras and inspection.

Collingwood District.

The road leading southerly from the Town of Collingwood, Hurontario Street, has been metalled with broken stone for a distance of over

two miles from the town, and is one of the best samples of work done in the County. This is an old road and had been previously graded and gravelled.

In making the improvement which was done this year, broken stone was applied to a depth of ten inches, the stone-crusher and 15-ton steam-roller belonging to the Town of Collingwood being used in preparing and placing the stone. Over the stone, to assist the consolidation, was spread a light coating of gravel. The grade of this road, owing to the great amount of travel over it, was kept at its original width, the ditches being cleaned and well opened. The width of grade varies, but will average about twenty-four feet. Stone was placed on the centre to a width of twelve feet, and the gravel exceeds this slightly. The cost of this work was $4,000.

Other roads in the vicinity of, and outside of Collingwood, are principally surfaced with gravel. The grade of these roads is, as a rule, narrowed and well crowned, and the ditches are well opened, with good outlets, culverts being placed wherever necessary. The quality of gravel used varies to a considerable extent, in some cases being almost too fine, and in others having a considerable proportion of large stones. The roller was not used on these gravel roads, but attention is given to raking the gravel back to the wheel-tracks until the roadway is consolidated.

Among the noticeable features of the work in this vicinity is a stone culvert, on the line between Lots 33 and 34, Concession 10. This culvert is of quarry stone from the town of Collingwood and laid in cement mortar. It is semi-circular and the side walls carried to bed rock. The dimensions are :—Length, 22 feet ; depth of walls below spring of arch, 3 feet; thickness of arch-ring, 18 inches; thickness of wall, 36 inches; height of parapet wall above arch-ring about 12 inches ; thickness of parapet wall, 18 inches; cost, $300. It is covered with about a foot of gravel so that the roadway is not interrupted. As a specimen of permanent and workmanlike construction, this is one of the most satisfactory culverts in the Province.

On the road leading westerly along the Bay is a section along which, and within the road allowance, a creek formerly flowed for some distance. In order to effect the construction of a more permanent roadway, this creek has been diverted so as to flow within private property. The road has now been straightened and built in a durable and safe manner.

A section of road in the Township of Flos, through a very sandy district has been coated with a layer of marl. This marl was obtained principally along an adjoining section of the same county road, and was excavated in part, in opening the side drain. Traffic on this road is light and the improvement, while not of a permanent character, is regarded as very satisfactory. In dry weather it is all that could be desired, but in wet weather it becomes somewhat slippery, though not so much so as ordinary clay.

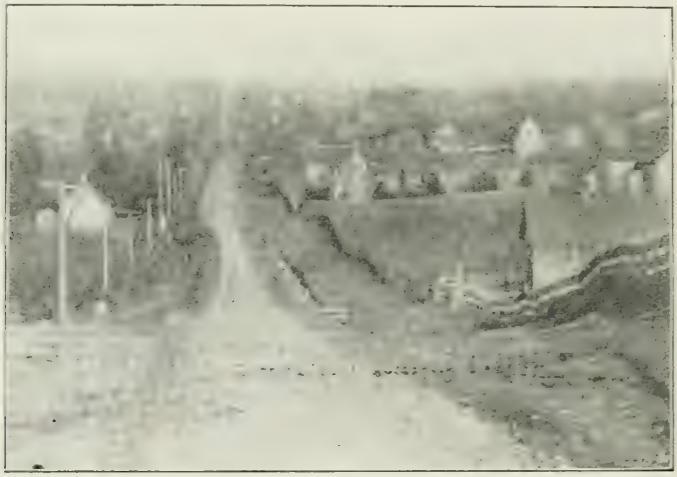
Penetanguishene District.

County roads in the vicinity of Penetanguishene have been improved in a durable and efficient manner. The principal machinery used in the work consists of a six-ton roller, a grader, wheel and drag scrapers. The general plan has been to grade the road with the grading machine, leaving gutters on each side of the grade. The earth sub-soil was then rolled, a layer of gravel applied and this in turn rolled. The sub-soil varies from sand to clay, the sand in some cases being very light.

Rolling the sub-soil, and consolidating it has been found very important. Roads not treated in this way break up much more readily, involving the waste of a portion of the gravel surface.

In the treatment of gravel it is first drawn down from the face of the bed or stratum in the pit with rakes, and any large stones are removed. By this means, gravel of a more uniform quality is obtained for the road than by the usual method. On the road, the gravel is spread with rakes, large stones being drawn ahead, so as to be under the next load dropped on the road. Care is taken when wheel tracks form to drawn in gravel with the grader to fill them.

In the matter of labor and teams, it is found desirable to provide sufficient so that the work will go along without stopping to rest. Loads of gravel contain usually one and a third cubic yards, but two teams are used to draw the load from the pit. On the grader, three teams are used on the lightest work, and is found to be a matter of economy.



New Road into Penetanguishene. Simcoe County Road.

The work of improving the road from Lafontaine to Penetanguishene was somewhat unusual because of the number of large stones and boulders on the road allowance, the old road winding in and out to avoid them. The largest of these stones were blown out with dynamite, smaller boulders were drawn to the side of the allowance by horses, the road was then graded and gravelled. The straightening of this road has made a marked improvement and several large cuts and fills have been made on it.

On the road leading south-westerly from Penetanguishene, a dangerous railway crossing existed. The county commissioners, however, have taken the matter up with the Grand Trunk Railway, and arrangements have been made for an overhead bridge at this point.

Orillia District.

One of the best pieces of county road in Simcoe is a section leading northerly from Orillia along Lake Couchiching, which has been metalled with broken limestone for a distance of two and three-quarter miles at a cost of $2.134. The graded portion is twenty-six feet wide, stone is

placed on the centre to a width of seven feet and a depth of eight inches at the centre. The rock crusher and steam roller belonging to Orillia were used for this work.

A similar section, slightly over two miles in length, but of broken granite instead of limestone, was built near Washago, at a cost of $2,196.75. This included five culverts; four of vitrified pipe, and one of stone.

These roads, particularly that leading into Orillia, are subject to heavy traffic. The grade on the Orillia road was made somewhat wide owing to the proximity of the railway, which the road parallels for some distance, and horses are occasionally frightened by passing trains. On this road are two sheds into which excitable horses may be driven on the approach of trains.

The road southerly from Orillia adjacent to Lake Simcoe has been surfaced with gravel and is well formed. The drains were carefully excavated and sighted to grade, culverts being placed where required. On this road several hills, formerly in a very bad condition, at times almost impassable, have been given especially effective treatment. They have been cut down to a permanent grade, under-drained with tile, and well-coated with gravel. A short wooden bridge has been replaced with a concrete culvert and a deep fill. This culvert is 48 feet long, four feet span, and five feet above the bed of the creek. The walls are twelve inches thick and the arched top, fifteen inches. While not erected after an accepted design, the depth of fill largely counterbalances this defect, and the work is no doubt permanent. The fill at the base is the full length of the culvert, about ten feet in depth and the sides are riprapped.

Where work is carried on in the vicinity of towns or villages, the workmen board at houses in the vicinity of the work. But in the Orillia district, a camp has been organized for use where board convenient to the work cannot readily be had.

Summary.

In an examination of the county roads of Simcoe, some of the main features which mark the more permanent character of the work and distinguish it from the usual township type and methods, and some of the benefits arising therefrom are the following :

(1) The use of road rollers and stone crushers, particularly the former.

(2) The uniformity of grade and drainage.

(3) The treatment of hills and ravines, involving the reduction of grades and permanent cuts and fills.

(4) The construction of durable bridges and culverts, of steel, concrete, and stone masonry.

(5) The treatment of gravel in the pit, and on the road, including the removal of larger stones, the spreading of the gravel on the road, and raking so as to bring the coarser material to the bottom.

(6) In the hauling of gravel, the use of boxes holding from a yard and a quarter to a yard and a half.

(7) The treatment of the road so as to make it at once fit for travel after construction.

(8) The straightening of road allowances, and the straightening of the roadway within the allowances.

(9) The construction of long stretches of road, instead of short, disconnected and irregular patches.

(10) The treatment of roads after construction to keep them in repair, especially the bringing in of metal by the use of the grader to fill the wheel tracks.

Some of the details above enumerated are no doubt characteristic of the work in certain townships, but rarely in the same comprehensive, and workmanlike manner that belongs to the county system as indicated in Simcoe. One of the chief benefits arising from the county system has been that townships in the county are copying the models set by the County, both in methods and results. Under the county system of Simcoe, a body of workmen are being trained in road construction and their services will in time be at the disposal of the townships.

TOLL ROADS IN ONTARIO.

Toll roads are steadily disappearing from the Province. At one time very general, they have been, from time to time, taken over by local and county municipalities, principally the latter. Wentworth, Oxford, and Lanark, have recently purchased all toll roads in the respective counties, including them in county road systems which are being maintained under the Highway Improvement Act. The toll roads remaining in the Province are as follows :

County of Brant.

Brantford and Paris Road Company	6 miles.
Paris and Ayr Road	5 miles.
Brantford and Oakland Road Company	6 miles.

County of Carleton.

Bytown and Nepean Road	8 miles.
Ottawa and Gloucester	20 "
Nepean and North Gower Road	6 "
Ottawa, Montreal and Gloucester Road (Consolidated)	17 "
Richmond and Ottawa Road	10 "

County of Elgin.

London and Port Stanley Toll Road	16 miles.

County of Frontenac.

Storrington Road Company	10 miles.
Bath Road Company	6¾ "
Portland Road Company	10 "
Perth Road Company	11 "
Waterloo and Sydenham Road	9 "
York Road (County Road)	7½ "

United Counties of Leeds and Grenville.

Brockville and Prescott J. S. R. Company	12 miles.
Lowell Plank Road Company	6 "
Farmerville Plank Road Company	5 "
Township of Elizabethtown	15 "
Township of Augusta	10 "
Township of Elmsley	5 "

County of Lambton.

Sarnia and Florence Plank Road Company	11 miles.

COUNTY OF MIDDLESEX.

Proof Line Road Company..... ..... 10 miles.

UNITED COUNTIES OF NORTHUMBERLAND AND DURHAM.

Cobourg and Port Hope Road Company ..... 5 to 6 miles.
Cobourg and Grafton Road Company ..... 5 to 6 "
Cobourg and Baltimore Road Company ..... 3 to 4 "

UNITED COUNTIES OF PRESCOTT AND RUSSELL.

Gloucester and Ottawa Macadamized Road Company ..... 14 miles

COUNTY OF WATERLOO.

Ayr and Paris Road ..... 1 mile

COUNTY OF YORK.

Holland River Road Company ..... 3 miles.

DIMENSIONS OF ROADS.

The dimensions of roads cannot be fixed for all cases. While a general rule may be laid down, there will be a great many necessary exceptions to such a rule. Reasonable consideration should be given to all details affecting the convenience and safety of the travelling public, the amount and character of traffic, the local quality and cost of gravel and stone, the nature of the soil underlying the road, and other matters affecting construction.

Width of Roads.

The usual width of road allowance is sixty-six feet, and this for ordinary highways is very satisfactory. Less than this is not sufficient for possible requirements. More is apt to be, except in towns and cities, unnecessary.

The graded roadway should, as far as possible, be placed in the centre of the road allowance. In unimproved roads, it is very common to find the graded roadway straggling from side to side of the road allowance. This interferes with the drainage, adds to the length of the road for travel and construction, and is unsightly in appearance. This is a relic of the days when wagons had to wind around stumps and boulders in the road, and if any of these remain, they should be removed. Wherever practicable, the grade should be straight and in the centre of the road allowance.

The width of grade, on level ground between the inside edges of the open ditches, should rarely be less than eighteen feet, while a width of twenty-four feet will meet the needs of heavy traffic. A greater width than twenty-four feet is rarely necessary. Where there are high and unsafe embankments, the grade should be made wider. An unnecessary width of grade, merely adds to the cost of construction and maintenance without any corresponding benefit.

This entire width need not be metalled with gravel or stone. The ordinary practice is to metal only the central eight feet for a single line of traffic. Near towns where traffic is heavy and vehicles pass each other at frequent intervals, it is better to make the metal roadway wide enough to accommodate two lines of traffic, or from twelve to sixteen feet.

Depth of Gravel or Stone.

The depth of gravel or stone to be used must vary with the quality of the material, the amount and nature of traffic on the road, and the nature of the subsoil. A dry, compact and stony subsoil needs less metal than does a plastic clay, difficult of drainage. A definite rule cannot be laid down to accurately meet all conditions, but from six to twelve inches of well consolidated material will afford a sufficient range to accommodate most circumstances. Ordinarily, ten inches of metal should accommodate the heaviest traffic to which a gravel or broken stone roadway can be economically subjected.

The Crown.

A defect of most country roads is the flat, or even concave surface. Others present the opposite extreme, and are so rounded up as to be dan-

Many streets and roads have already plenty of good stone and gravel on them. What is needed is to loosen up the roadway and screen out the dirt—then roll down the clean metal.

gerously high in the centre, making it difficult for vehicles to turn out in passing. Roads must be crowned sufficiently to shed water from the centre, to the open drains at the side, otherwise water will stand in the roadway, soak into it, soften and cause rapid wear, resulting in ruts and holes; but a crown higher than is necessary to properly drain the surface is also objectionable. The smoother and harder the surface of the road, the less crown is needed.

The amount of crown should not be more than sufficient to provide for surface drainage. A sharp crown tends to confine traffic to the centre of the road; and also in turning out, the weight of the load is thrown on one pair of wheels, in such a way as to rut the side of the road. The shape of the crown is a matter in which road experts differ, but with the class of material available for roads in Ontario, and the methods and plans of construc-

tion, a form as nearly circular as possible will be found serviceable, and most easily obtained.

From the edge of the open drain the graded portion of the roadway should be crowned with a circular rise of one inch to the foot from side to centre. That is, a driveway twenty-four feet wide would be one foot higher at the centre than at the side. This amount of crown may at first appear excessive, but with gravel roads and roads metalled with the quality of stone commonly used, is not more than enough to provide for wear and settlement consistent with good surface drainage.

A crown may appear too high at first, but a new road always settles and experience shows that a good crown tends to produce the more permanent road.

Drains.

The height of the road above the level of the adjacent land need not be greater than is sufficient to provide against the overflow of storm water, which should always be guarded against, particularly if proper drains are provided.

The depth of the open drain must vary according to the amount of fall and the quantity of water to be provided for; also according to the sub-drainage needed and provided. When tile sub-drains are used the open drain can often be shallow, in which case the width of the graded roadway can be narrowed, there being no danger of accidents such as are caused by a deep trench at the roadside. The tile drains should be placed below severe frost, and usually a depth of two or three feet will answer.

GRAVEL.

In choosing between the two, consideration should be given to the country roads throughout Ontario. Until the introduction of rock crushers of recent years, road improvement without a local supply of gravel was considered almost impossible. Gravel varies greatly in quality, but in general, it may be stated that, as a material for road covering, it is not so durable or serviceable as broken stone.

Gravel vs. Broken Stone.

In choosing between the two consideration should be given to the quality of each obtainable, the cost laid down on the road, and the amount of traffic which the road accommodates.

Municipalities having an abundant local supply of good gravel are in a much more favorable position to rapidly improve their roads than are municipalities which are compelled to use crushed stone, owing to the greater cost of the latter. This applies only to first cost, however, and under certain circumstances of traffic and relative qualities of material, broken stone may after a term of years, be much cheaper than gravel. While first cost is important in many ways, yet true economy should consider the ultimate cost after a term of years when the outlay for maintenance and repairs has been included.

The main difference between broken stone and gravel is: 1st. The crushed stone is angular, the gravel rounded and waterworn, so that the former consolidates more firmly, with a mechanical clasp, while clean gravel shifts and ruts more readily under wheels, and 2nd. Broken stone

is free from earthy water, while gravel contains more or less sand, clay, or loam, that packs readily in summer, yet softens in wet weather and ruts under traffic.

Nature of Gravel.

Gravel consists of fragments of stone, for the most part of glacial origin, deposited in ridges and banks. These fragments are rounded and waterworn, and represent the hardest portions of the rocks from which they were derived. Gravel usually partakes of the general character of the geological formation of the district. Thus in Western Ontario, limestone gravel predominates; while in the eastern and northern parts of the Province, it is composed of the harder stones such as granite, quartz, gneiss, and blue limestone. Creek and river gravel is the gravel of the district washed and collected by running water.

The Best Gravel.

Pit gravel, that excavated from gravel banks and ridges, is the form in which it is usually considered for roadwork. The best gravel for roadwork, is that which is clean, free from an excess of sand and clay; composed of fragments of varying size up to one and one-half inches in diameter, with just enough fine stuff to fill the voids and make a compact mass. The appearance in the face of a pit, is that of an almost solid mass of pebbles, from the size of marbles up to 1½ inches in diameter. Where such gravel stands upright in the pit, after the spring thaw, with no trace of slipping, it may be considered fit for use on the road without any treatment.

While all indications are of value, the test of actual use on the roads is the best means of determining the relative merits of different gravels. In this, consideration should be given to length of time each has been in service, the care taken in putting them on the road, the attention to maintenance and repairs each has received, the nature of the soil on which each is laid, the manner of grading, draining and preparing the foundation, and the amount of traffic to which each is subjected. The sound made by metal tires in passing over the road is also a means of judging the quality of the gravel. A continuously smooth and gritty sound is most favorable, if the gritty sound is absent, the gravel contains too much earthy material, while an interrupted, intermittent sound, indicates the presence of large stones.

Defects in Gravel.

Gravel may have a number of defects in varying degree. There may be an excess of large stones. There may be an excess of sand, clay, loam, and earthy matter. The entire mass may be too fine, approaching a coarse sand. These defects may exist alone or in combination with one another.

Prevention is Better than Cure.

Gravel beds and pits, should be stripped of the layer of earth and sod which usually covers them, before gravel is removed from the pit. If this is not done as the gravel is removed from beneath it, the soil and sod falls in lumps, into the pit, are mixed with the gravel and are drawn with it to the road. Teamsters should be watched to see that, in their haste to get the wagons loaded, that they do not unnecessarily throw in refuse, earth, sod, and large stones.

Building a Colonization Road in New Ontario.

Treatment of Gravel.

Where gravel consists of a mass of large stones and boulders it should be treated as rock, and put through a crusher. A rotary screen attached to the crusher, is always desirable, to separate crushed stone into coarse and fine grades. But where there is an excess of clay, earthy matter or sand, a rotary screen is especially useful in removing such objectionable material.

If the gravel is of fair quality, except for a few large stones, these stones may be raked out as it is spread on the road, and drawn forward so as to be under the next load. Or if large stones are too numerous to be sufficiently removed by this treatment, a man may also be stationed in the pit to rake out as may stones as possible from the gravel, as it is being shovelled into the wagons.

Screening Gravel.

If the gravel, on the other hand, is inclined to be too fine, earthy or sandy, but has a fair proportion of pebbles of proper size, screening alone is advisable. For this purpose the best implement to use is a rotary screen, operated by steam power. The gravel may be drawn in wagons to an elevated platform, dumped into a hopper from which it passes through the rotary screen; and from the screen to an elevated bin, from which the screened gravel is again loaded into wagons, to be taken to the road; since by means of the elevated bins, the expense of shovelling into wagons is saved. The cost of screening is measured by the cost of the additional handling and the amount of refuse removed; the entire cost of screening being chargeable to the quantity of clean gravel obtained for use on the road.

Gravel That Packs Well.

That gravel packs readily on the road under traffic is by many considered a proof of its good qualities. On the other hand, it may merely be an evidence of inferiority, an indication that it contains too much clay and earthy material; that it will turn to mud and slush in the wet seasons of spring and fall. The stony material is what is required on the road, for it is the stone that finally consolidates into a durable coating and resists wear. A road surface of stony material will stand up and keep its shape, but fine material becomes "slushy," flattens out under traffic, and the crown of the road is lost.

It is, of course, desirable that gravel should consolidate into a firm and water-tight road covering; and for this reason, it is sometimes suggested that screened gravel is not desirable, because it does not pack readily. Screened gravel packs more slowly, it is true, than does unscreened. But although it packs more slowly, the bond, when finally obtained, is much more durable, as it is a firm mechanical clasp of one stone upon another, aided by the cementing properties of the stone dust created by one stone rubbing on another.

Purchase of Gravel Pits.

Gravel should be bought by the pit, not by the load. Where a property owner declines to sell land required for the purpose of a pit, the Municipal Act provides means for its expropriation. To buy gravel by the load, as some councils do, is a very expensive and extravagant method. For a few acres comprised in a gravel pit, some land owners have been paid enough to buy an entire farm. This is especially the case where the gravel is drawn by statute labor and the size of the loads is not in any way regulated.

Townships sometimes find difficulty in preventing ratepayers from taking gravel from the township pit, for private purposes. Where gravel is very scarce, councils would be justified in wholly prohibiting the use of gravel in this way; but the better method, as a rule, is to impose a proper charge, say from 10 to 30 cents, for each load taken. Deep pits are more valuable than are shallow layers of gravel, as shallow pits require a much greater stripping of surface soil in proportion to the amount of gravel obtained, and the cost of loading is thereby increased, the loading of gravel from a deep face being more easily and quickly done.

Searching for Gravel.

In searching for gravel beds, a post-hole auger, or a simple form of drill will be found of service in testing any ridges that suggest the possibilty of a gravel pit. Good indications are frequently found along the banks of streams where any extensive strata are exposed. Gravel in the bank of a stream can frequently be drawn down from the face of the pit into the water and washed by natural means to free it from clay, loam or an excess of sand. Creek or river gravel deposited in bars can, if necessary, be washed in the same manner.

Teaming Gravel.

The cost of hauling gravel forms the greatest portion of the cost of a gravel road. Statute labor is very wasteful in this respect. In the performance of statute labor, it is not uncommon to see teams going out of a pit, drawing half or even quarter of a cubic yard; whereas a load should contain from a yard and a quarter to a yard and a half, weighing something over two tons. In teaming gravel the size of the wagon box should be specified, and a definite number of loads should form a days work, according to the length of haul.

BROKEN STONE.

There are localities in Canada where good gravel is not obtainable, but where stone can be had, either as bed rock or as field boulders. Some townships have used stone broken by hand, but a stone crusher with screen attachment affords a much cheaper method.

The stone should be separated into grades according to size, the coarser stone to be placed in bottom of the road, and the finer at the top. This grading of the stone is done by means of the screen attachment. If the stones are placed in the road without being graded in this manner, the smaller stones wear more rapidly than the larger, and a rough surface results. Large stones at the surface, moreover, are more apt to become loose, to roll under the horses' feet or the wheels. For country roads there should be placed in the roadbed : (1) a layer of stones such as will pass through a 2½ inch ring; (2) on this layer of stones such as will pass through a one-inch ring; (3) on this a sprinkling of screenings—that is, the dust and chips created in crushing.

Broken stone roads are not necessarily "macadam" roads. Broken stone was used on roads long before the time of Macadam, but it was used in the same manner as a good many townships and towns in Ontario are using it to-day, and with much the same result. The roads are bad, and will re-

main so until they are drained, crowned, and graded, and cared for in the manner directed by Macadam, and by those who have succeeded in improving upon the methods of Macadam.

Broken stone, when of a suitable quality and properly applied, is a more durable surfacing material for roads and streets than gravel. Owing to the greater cost, it is used principally by towns and villages, and by those townships which have not a supply of gravel. As ordinarily used in townships, broken stone gives less satisfaction than gravel, because the latter binds quickly under traffic owing to the presence of sand and clay. To get the best service from broken stone a road roller should be used to consolidate it; otherwise the stones will roll loosely for a considerable length of time. The feeling of councils with regard to its use is that it makes a passable road for a short time in fall and spring, but that a good dirt road for summer use is spoiled. Townships which have only broken stone for road metal, will receive decided benefit from the use of a steam or horse road roller, which will at once consolidate the stone, and make a thoroughly good and smooth road for all seasons of the year. There must be a sufficient body of broken stone to consolidate into a compact layer. A sprinkling of stones over the surface is useless. It merely impedes travel on what might otherwise be a good dirt road. Six inches of broken stone is the least which should be used in making a durable roadway for any purpose, and it should be the aim of councils to thicken this covering as circumstances will permit.

Quality of Stone.

The different kinds of stones for macadam roads cannot be completely approached from the standpoint of names. Granite, limestone, sandstone, are rocks common in this Province, but to say that granite is better than limestone, or that limestone is better than sandstone, while true of the best qualities of each, may be quite incorrect as regards particular varieties, since a good sandstone may be preferable to a poor limestone or granite. The best stone for a macadam road is that which is hard and tough, not easily affected by the atmosphere, moisture, or the varying conditions of climate. The choice will generally lie between a cheaper and less durable stone near at hand, and a more costly, but better stone from a distance.

A great proportion of the macadam roads in Ontario will be constructed of limestone, since this rock is the most common, quarries being within easy access of almost any part of the Province. In quality it ranges from that which is useless to that which is almost equal to trap. Limestone, if it is tough and close-grained, is an excellent material for roads in which the weight of traffic is not excessive. Some dolomitic limestones, while hard appear to lack toughness. Other limestones of a slatey texture, have not good wearing qualities, are rapidly disintegrated on exposure to the atmosphere, and should be avoided. Some limestones of an open, porous nature, yield readily in this climate to the effects of moisture and frost, merely turning into mud. The excellent binding qualities of limestone make up largely for a lack of hardness, a weak cement being formed by the dust, which adds very much to its durability.

All things considered, hardness and toughness to resist wear and atmospheric action, the relative desirability of rocks is ordinarily in the following order : 1, trap; 2, syenite; 3, granite; 4, schist; 5, gneiss; 6, limestone; 7, quartzite; 8, sandstone; 9, slate; 10, mica schist; 11, marble. Of these, the last four, sandstone, slate, mica schist and marble are of little value in roadmaking except for the lower courses when they are surfaced with a durable stone that will resist wear.

Testing Stone.

In determining the best quality of stone for road purposes, there are four prominent destructive agencies which have to be considered: 1, the crushing of loads; 2, the grinding action of the wheels; 3, the blows from the shoes of horses; 4, climatic influences of air, water and frost.

With respect to the first three, a stone may have great hardness and splendid crushing strength, but at the same time be brittle, yielding readily to the grinding effect of wheels, and the blows administered by the hoofs of horses. On the other hand, a stone may be able to resist in a measure the second two wearing agencies, those of "abrasion" and "impact," and yet be so soft as to crush readily.

The fourth agency, the decomposing effect of the atmosphere, is one of very great importance. The denser stones, those which absorb the least water, are usually best able to resist the injurious action of frost and moisture. The weight, or specific gravity of a stone, is an indication of durability in this respect, the lighter stones usually being those which are most porous, and in consequence are subject to atmospheric decay.

Another feature which a good rock for roadmaking should possess is that, when crushed, it will break into a compact form. A stone that, in breaking, takes thin, flaky shapes, will not wear so long as one that breaks into cubical pieces, nor will it consolidate so readily in a roadbed, for a wheel, in passing over the sides of a flat stone, will throw it out of place and loosen the stones adjoining.

The tests usually applied in determining the qualities of stones are those which indicate crushing strength; the power to resist impact and abrasion; the density, determined by the weight of the stone; the amount of water absorbed. While elaborate trials may be made, a practical man can judge of the qualities of a stone by applying simple tests: by breaking the stone with a hammer; wearing it on a grindstone: crushing it in a blacksmith's vice; scratching with an iron nail: breaking small pieces with the fingers. By such simple means, a general idea of the stone can readily be formed, but no test is so conclusive as actual wear on the road.

Field Stone.

Broken stone produced from boulders has been objected to as road metal on various grounds. The rounded sides do not permit consolidation with the minimum of vacuum. If they have been exposed to the atmosphere the boulders are apt to be decomposed, are soft and will crumble readily. The mixture of different kinds of rock on the road surface, some hard, some soft, permits unequal wear, and produces a rough surface.

While these are defects which certainly are not to be overlooked in the choice of a road metal, boulders nevertheless, constitute a very valuable material for the construction of a road, particularly in localities where they are plentiful and gravel or bed rock not readily obtainable.

In selecting field boulders, care should be taken to discard all rock which shows signs of having "weathered," or having been decomposed by the action of the atmosphere. Sandstones and granites are peculiarly subject to this disintegration, while soft limestones are very common. Rocks which should be condemned for this cause are those which crumble readily under successive blows of a hammer, or which show iron stains when broken. A little experience will quickly teach a judicious roadman to detect the stone which is unfit for road purposes.

PLACING ROAD METAL.

To know how gravel or stone should be placed on the road, it is necessary to have a knowledge of why it is placed on the road. This is a matter to which very few of our roadmakers have given the slightest attention, and very few could give a satisfactory answer to the question. The popular idea is that the stone makes a sort of carpet for a while, in a short time it will be forced down into the soil to form a bottom, on this more gravel or stone will have to be placed, and that this process will have to be continued indefinitely until a good road is made. There is even a very general belief that it is not necessary to drain a road, but that the only means of accomplishing the desired end is to pile on gravel year after year, that water, unless it floods over the top of the road, has little to do with the matter, and that so long as the actual surface of the road does not get wet it does not matter how boggy it may be underneath.

In the intelligent construction of a road, the intention of the gravel or stone coating is to form a waterproof covering for the soil underneath as well as to form a hard wearing surface. A well-compacted layer of gravel or broken stone over it, distributes the concentrated wheel load over a greater area of subsoil; it does not rut readily, and affords good surface drainage; it gives a smooth, hard, wearing surface; water does not easily penetrate it so as to soften and reduce the supporting power of the subsoil. Of course, gravel and broken stone cannot, as a matter of fact, be entirely impervious, but so far as the coating of these materials does prevent the water passing through to the sub-soil, it fulfills the greater portion of its mission.

To accomplish this to the greatest possible extent there are several points which it is necessary to pay attention to :

(1) The road must be crowned or rounded up in the centre.

(2) The material must be as compact and solid as possible.

(3) The surface of the road must be made and kept smooth.

Crowning the Road.

By having the road crowned or rounded up in the centre, water is at once thrown to the sides where it can be carried away in the drains. If the road is flat on top, or if hollow, as many of the roads of Canada are, water stands on the road, soaks down through the road covering and softens the soil beneath. Then the trouble begins, for there is nothing to support the gravel, so that when a loaded vehicle passes over it the wheels are forced down through the gravel and into the soil. The soil is plowed up, mixed with the gravel, and the serviceability of the road is largely destroyed.

The means of providing a proper crown must depend on circumstances. For an average country road on which a grading machine is used, the best method will be to first round up the natural soil, giving it a slightly less crown than it is intended the finished road shall have. This completed, pass the grader over one side of the centre cutting off the top and turning the loosened dirt to the side, then pass the grader back along the other side turning the loosened dirt to the side. This will leave a flat surface in the centre of the roadway, along each side of which is a shoulder of loose earth, forming a shallow trench. In this the gravel should be placed, spread with a rounded surface, and the loose dirt at the sides levelled off to conform to the shape of the roadway.

Old gravel roads are commonly flat, in ridges, with square shoulders at the edge of the ditches. In this case the better plan is to cut off these shoulders throwing the loosened earth outward. The ditches are usually very wide and flat, the road having been graded by drawing the earth out of the ditches with a scraper, so that the shoulders thus turned outwards merely widen the graded roadway without interfering with the drain. If, however, these ditches are sharp and deep, the loosened earth may drop down so as to obstruct the water, in which case it will have to be thrown across the drain to the roadside by hand, a proceeding seldom necessary.

Usually a sufficient depth of gravel will be found upon these roads, requiring only that the centre should be raised by cutting off the sides. After this is done as above described, a light coating of clean gravel to fill the ruts and depressions and restore the crown will make an excellent road.

Consolidating the Material.

The road covering should be solid and compact in order to shed the water. Under present methods, the gravel or stone is dumped in the centre of the road and is left as it falls, a mound of loose material, avoided by the

A Wellington County Road.

users of the road until late in the fall when the muddy and rutted state of the road compels them to drive along this mound. Gradually it is flattened down and after a year or so, during which time it has been mixed largely with the soil beneath, assumes the shape of a road. The utility of roads made in this way is largely wasted. Roads must be made for traffic not by it.

This loose stuff absorbs the rain as it falls, even before it is cut into ridges by wheels and the feet of horses. When it has been cut into this condition it acts as a receptacle to hold all the moisture its surface will receive. In this way the whole surface and foundation of the road is softened, is readily cut up and destroyed.

The best remedy for this waste in road-making is to spread the road metal to conform to the required surface of the finished road, and then thoroughly consolidate it by the use of a heavy roller. It can be largely remedied also by taking proper care of the road, if a roller cannot be had. By raking the loose material into the ruts and wheel tracks as fast as they appear, or drawing it in with a grading machine, nearly the same end will be accomplished; but less perfectly and requiring a longer time. The first vehicle passing over the road does comparatively little injury; it is when ruts have been formed which hold water and other wheels follow in these tracks that the greatest damage is done.

A Smooth Surface.

It is evident that a smooth surface is essential to a good road. A rough surface is necessarily such as will impede the flow of water from the centre to the drains. To such roads rain is always an injury. With roads properly built, on the contrary, a good dash of rain will flush away the dust which has accumulated, and which, if it remains on the road in time of steady rain and slush, acts as a sponge to absorb moisture and soften the surface of the road.

HAULING GRAVEL AND STONE.

As pointed out elsewhere in this report, in discussing statute labor, the principal item of expenditure in making roads is the cost of labor. Economy in road construction must, therefore, be very largely economy of labor. Reduction in cost is proportionate to the efficiency with which labor is managed.

Of the labor required, the greater portion is usually in the transportation and handling of gravel and broken stone. One of the first qualifications of a good road commissioner is skill in handling and directing men and teams so as to utilize them to the best advantage. In performing any work, sufficient men and teams should be employed, so that all can be kept steadily at work. Too many men and not enough teams, or too many teams and not enough men, mean that one or the other will be standing in idleness a considerable part of the time.

Teamsters should drive into a gravel pit in regular order. They should not crowd one another in a small pit, so that some few can fill their wagons with good material, while others haul sods and boulders. There are usually enough of the latter on the road without paying for teaming more.

A day's work in hauling gravel or broken stone, should be specified by the number of loads, according to length of haul, and every load should contain a certain quantity—usually one and a quarter or one and a half cubic yards. It takes very little more time to go from the pit to the road with a yard and a half of gravel, than with only half a yard. In fact the larger load represents almost a clear gain of the difference in size of the loads. Specify the size of the wagon box and number of loads to constitute a day's work.

Manufacturers of roadmaking machinery are now supplying wagons with a hopper-shaped opening between the front and rear axles, made expressly for drawing gravel and broken stone and distributing it over the road. The opening of the hopper is controlled by a lever beside the driver. The metal can be distributed to any required depth, after a little experience, by regulating the extent to which the hopper is opened.

For screenings especially, in distributing them evenly over the stone, these wagons are particularly useful. A number of these wagons, coupled together, and drawn by a traction engine, affords one of the cheapest methods of hauling gravel or stone for a considerable distance, under certain conditions. Each wagon holds about 1½ cubic yards of metal.

ROAD DRAINAGE.

Good drainage is the first principle of roadmaking. Roads which have been particularly expensive or difficult to maintain, are almost invariably found to be defective in either surface or deep drainage. It will be

found that the surface water rests on the road, soaks into it, and permits the road to cut up under traffic. Or the sub-soil drainage is defective, water rising in the roadbed from below, tile drains not having been provided to intercept it. Mud on the surface of the road is bad, but mud below the surface is a greater evil.

Effect on Different Soils.

The importance of drainage cannot be too thoroughly impressed. Clay in thick beds, when dry, will support from four to six tons per square foot of surface, according to the quality of the clay. If but moderately dry it will support from two to four tons only per square foot of surface. If the clay is wet and soft it will yield to almost any load. Gravel, if well compacted, forms a much stronger roadbed, is less yielding to the action of moisture, and for this reason, even for a thin surface coating, strengthens the road somewhat. But the real strength of the road must lie in the sub-soil. Vegetable mold and alluvial soils are weak, having a sustaining power of only one-half to one ton per square foot, and for this reason it is well to remove such soils, securing, if possible, a gravel, clay or sand foundation.

General Features of Drainage.

A road that is built and maintained with a view to good drainage is almost certain to be a good road. If this is done, the road surface will be kept hard and smooth and sufficiently crowned, so that water will not lie on it in depressions or ruts, but will flow immediately to open drains at the side. These drains will have a regular and constant fall to a free outlet. Further than this, the underflow, or sub-soil water, will be removed, where necessary, by tile drainage. The method and extent of drainage must depend largely upon the character of the soil over which the road passes; clay, loam, gravel, sand, swampy, springs, flat, undulating, are all terms suggesting conditions that modify the plan of drainage.

Drainage Usually Provided.

The drainage usually found on existing roads consists of open ditches on each side of the graded portion, with a depth of about eighteen inches. They are frequently carried through rises of ground, past natural water courses. Little attention is given to the regularity of the grade in the bottom, or to the amount of fall, as evidenced by the varying depths of stagnant water at wet seasons. The object of these drains was more to procure earth to raise the centre of the road above the water line than to lower the water. Very often they have no outlets.

Outlets.

Water should be disposed of in small quantities, along natural watercourses. If carried long distances and gathered in large bodies along the roadside, it gains force and headway, resulting in extensive wash-outs, and is in every way more costly to handle. It should be taken away from the roads as quickly as possible, for an excess of water is the great destroyer of roads. A drain without an outlet is useless—or worse than useless. If there is not an outlet, the water is held in elongated ponds by the roadside, to soak into and soften the travelled roadway. This water is drawn up into the entire roadway by capillary attraction, just as a sponge will absorb water and hold it in all its pores.

The most difficult sections of road to improve are those which do not afford convenient outlets for drainage, but rather than spend money year after year in a useless effort to maintain the road without drainage, it will be found a measure of economy, to at once provide proper outlets, even if it is necessary to carry the drain a considerable distance across private property.

Open Ditches and Gutters.

The introduction of graders, wheeled scrapers and modern road machinery requires that a roadway should, in order to construct it economically, without hand labor, be such as these implements will readily form. For this reason, deep, open ditches, with sharp angles and narrow bottoms, are not now suitable; but instead, a cross-section of road should show gentle curves, the rounded surface of the road not sharply defined from the ditch. The latter should be about two feet wide in the bottom, where a wheeled scraper can work, and about eighteen inches in depth. The crowning of the road materially aids surface drainage, shedding water to the side drains. Roads should be well crowned when first constructed, as the tendency is to settle and become too flat. A well-rounded road will last much longer than one that is too low and flat.

Water and Frost.

Water in freezing exerts an outward pressure of 300,000 pounds (150 tons) to the square foot. A dry sub-soil therefore becomes of greater necessity in a cold and humid climate, such as prevails throughout Ontario for a considerable portion of the year. The injury done to roads by frost is caused entirely by the presence of water. Water expands on freezing, and the more there is under a road and above the frost line, the greater is the injury. In freezing, the particles of soil in immediate contact with the water are first compacted. When room for expansion ceases within the body of the soil itself, owing to its saturated condition, the surface is upheaved. When thawing takes place, the sub-soil will be found honeycombed, ready to settle and sink beneath traffic. It is, therefore, of the utmost importance that the soil should be relieved of all water of saturation as quickly as possible by under-drainage. The impassable condition of the roads during spring, often axle-deep with mud, is to be attributed very largely to a wet sub-soil which has been honeycombed in this manner.

Underdraining Makes a Strong Foundation.

The making of a strong foundation thus resolves itself largely into a question of underdrainage, and the means whereby underdrainage is obtained must be adapted to the manner in which water finds its way under the road, and the nature of the soil. A soil retains in its texture, by capillary attraction, a certain amount of water. In the case of a plastic clay soil, which will absorb nearly one-half its weight and bulk of water, the water retained in this way may be the cause of injury. In the case of gravelly, sandy or other porous soil, it is necessary to remove only the water held by hydrostatic pressure in the foundation of the road. The effect of this is, that, with a clay sub-soil, under drains are nearly always beneficial in securing a strong foundation, and are necessary for traffic of even moderate degree. With porous soils, on the other hand, the necessity and means of drainage will depend upon the height to which the water rises in the foundation, and the direction from which it comes. When a strong foundation is needed these underdrains should be three feet below the surface of the sub-soil.

Deep Open Drains vs. Tile Drains.

The best practice does not direct that the old open drains should be deepened for the purpose of draining the sub-soil. Deep, open drains are expensive, dangerous and unsightly, and the excavated earth generally does more harm than good to the road when used to round it up, especially if piled on top of gravel or stone. When the combined cost of construction and maintenance is considered, a tile drain laid under the bottom of open drains is cheaper and more serviceable.

Method of Laying Tile Drains.

It may be accepted as a general rule, that roads tiled without gravel are better than roads gravelled without tile. All roads except those on pure sand can be improved by tile draining. A single line of tile, if placed about three feet below the bottom of the open drain, if the graded portion of the road is about twenty-four feet wide, will accomplish nearly all that

On the Simcoe County Roads, near Barrie.

tile drainage will do. If one side of the road is higher than the other, lay the tile on the high side so as to intercept the sub-soil water as it flows down the slope. A four-inch tile meets most conditions, but the size will depend on the length of the drain and the amount of water to be carried away. Care must be taken to give the tile a uniform grade, so that there will be no depressions. If possible, give a fall of at least three inches in one hundred feet. The cost will be about fifty cents a rod. The work, if properly done, will be a permanent and substantial improvement to the road, and will save many times the cost by lessening the amount of gravel needed on the road.

Location of Tile Drains.

Their location with respect to the road should be varied with circumstances. The most effective type of drainage employed is a system in which there is a tile drain on each side of the roadway underneath the open gutters, with V-shaped drains at intervals from the centre of the roadbed to

the side drains. From this the scale descends to drains at the side of the roads only; then a drain at one side only, or in the centre of the road; then only an occasional drain at springy or damp points.

How Water Enters the Tile.

It is of advantage to understand the manner in which underdrains act in different cases. With porous soils, in which the water rises under hydrostatic pressure, the water enters the tile from below. Just as water rising in a vessel finds an outlet in the sides or flows over the top, so the underdrains supply the necessary outlet for this excess moisture at a proper depth from the surface; it "lowers the water line".

With clay the process is different. Absorbing and holding as it does, like a sponge, a large quantity of water, drains are less effective, but none the less necessary. The cracks and fissures which appear throughout the surface of a baked soil during the summer drought, afford a clue to the action of underdrains upon the soil. As the clay yields up its moisture, it shrinks, is torn apart. These fissures, commencing at the drain, spread in different directions, and each fissure thus becomes a new drain leading to the tile. This process goes on, the fissures become filled with sand, vegetable and other porous matter, so that they assume a degree of permanency, and in clay soils, underdrainage is more effective after several years than at first.

Commence Where Most Needed.

Municipalities need not undertake to at once underdrain all their roads in this manner, following the one rule. The preferable plan is to place these drains where they are evidently needed most, in low-lying sections, where water is seen to remain longest on the surface in the spring, after a heavy rain, where springs have a tendency to appear, or where the ground is found to be cold and wet during the summer.

ROADS OVER HILLS

Roads should not be absolutely flat in any direction. A certain longitudinal slope, at least six inches in 100 feet, is requisite to carry the water out of the open drains and wheel tracks. A desirable grade will not exceed a rise of two or three feet in 100, as at that slope(which is the "angle of repose" for wagons on macadam roads, a horse can trot down without danger or injury. Hills should not, on much travelled roads, exceed a rise of eight feet in 100, or about one in twelve. When greater than that, they are a hindrance to traffic and to the free use of the road.

Each hill should be brought to its permanent grade, as far as possible, at one time. If reduced a small amount year after year, as is the common practice, the grading is apt to be destroyed in a large measure by rushes of water each ensuing wet season. The roadway being annually filled or cut settles slowly, and is apt to become almost impassable in fall and spring. Hills should be taken up for improvement consecutively, the worst or most necessary first, the grading entirely completed, and the road then permanently gravelled or metalled with broken stone.

Drainage of Hills.

Good drainage is especially necessary on hills. The cost of keeping hills in repair is frequently much increased by rushes of storm water, occasioned by the practice of carrying water long distances in open drains, and finally pouring it over the hill by the roadside. If the hill is steep,

and a cut has been made, the water is not, and very often at the time of spring floods and freshets, cannot be kept in the open drain, and so is allowed to make a channel of its own down the centre of the road. This condition is the common result of not disposing of water in small quantities along natural watercourses. No water should, as a rule, be allowed to pass over the hills by the roadside, except that which naturally falls on the surface of the slope. Provision should be made for the disposal of water in the drains back of the hill, by carrying it through private property, under the authority of the Drainage Act, if necessary. Property owners, however, should understand the wisdom of permitting drains to be constructed across their lands when the benefit to be derived is not only better roads, but better drainage of their own fields.

The crown of road on a hill should be slightly higher than is needed on level ground, a rise of at least one inch to the foot from side to centre being advisable for gravel roads. The crown must be sufficient to draw the water to the side gutters, and to do so, it must be sufficient to overcome the tendency of the water to flow directly down the hill, following the line of the wheel tracks. If the water commences to take the latter course, the wheel tracks are quickly deepened to ruts, stones are loosened or protrude, and the road becomes roughened and channeled.

Underground currents of water often find outlets on the hillsides. If any of these springy places occur under the roadbed, it is necessary to tap them at a good depth below the surface with tile drains. In such cases, tile drains will be needed under the open drains at the sides of the road, and the blind drains may then be carried diagonally across the road into the side underdrains. The open drains will sometimes need to be protected with cobble stones, if the hill is long or subject to damaging rushes of water.

Roads passing along the sides of hills are frequently softened and injured by the soakage water from high lands. This water should be intercepted before it passes under the road, by a drain along the side of the roadway next the hill. Tile should be used, if possible, instead of a deep open drain, and the trench filled with gravel, stone or other porous material so as to more readily intercept and absorb the soakage water.

AVOIDING HILLS.

A moderate divergence of numerous highways in the Province would do away with many expensive and unsatisfactory cuts and fills, and with a large number of bridges. The unsuitability of the soil also, if low-lying, swamp, or composed of vegetable matter, may render advisable a change of location in favor of a course which will offer a firmer and more easily drained sub-soil.

Road allowances in Ontario very largely follow concession and lot lines, without regard to the suitability of these lines for the location of roads. As a result, by unnecessarily crossing swamps, hills, and rivers at unsuitable places for bridges, the expense of making and maintaining the roads is much greater than it otherwise might be. What is of equal consequence, the roads, in spite of the added expense, are not so well adapted to traffic as they would be if laid out with regard to hills and other topographical features. As a rule, the most perfectly located roads in the Province are found among those known as "trespass" roads. They follow Indian trails and the paths first made by the early settlers. They are usually on high land, with a firm soil, avoiding swamps and going around steep hills.

The farmer prefers to have all his fields of rectangular shape, as they can be cultivated more easily than when outlined by circular or irregular lines. There is a disadvantage, too, in having an estate cut into separate sections by diverted highways. These are obstacles to the proper alignment of roads in long settled and populous districts, but present little difficulty in new portions of the Province. However, it is usually very much more in the interest of a property owner that the roads leading to his farm should be good and easily maintained, than that his farm should be in a compact block, with the roads to it impassable during a portion of the year, and even then expensive to build.

Councils are authorized to alter the location of roads by the Municipal Act, in a manner fair to all parties; and it is advisable that this power be judiciously used whenever circumstances render it practicable. Opposition will no doubt be offered in some cases by the individual property owner affected, but councils representing the general public have a responsibility resting upon them which should not be overlooked in a matter so important.

May be Shorter to go Around.

It is desirable that a road between two places should be as direct and short as possible. But a road is not necessarily shorter because it follows absolutely one pointing of the compass. The line followed by a vehicle, leading up the hills and down into the valleys, may be no shorter, nor, perhaps, as short, as a diverging route, following comparatively level ground; just as the distance from one end of the diameter of a sphere to the other is the same whether measured vertically or horizontally around the sphere.

Not only may nothing be gained in point of directness by following the line of the original survey, but there is to be considered the greater horse power required to move loads up and down the hills demanding, too, a greater expenditure of time. The steepest and longest hill governs the size of the load that can be hauled over the road.

Directness should frequently be sacrificed to obtain an easy grade, and to avoid expensive construction over bad ground, cuttings, fills, bridges and excessive grades.

SIDE SLOPES OF CUTTINGS AND EMBANKMENTS.

The protection of the sides of cuttings and embankments should be skilfully attended to. It is very common to see these washed away in places after a heavy rain, or after the spring thaw; the sides of the cuttings settle into and fill the open drains, and the water is forced into the road; the sides of embankments wash away, leaving dangerous holes in the road. The tendency is to make cuttings and embankments too steep, with a desire to do the least possible amount of earth work.

The stability of earth slopes is endangered by the action of air and moisture, especially by alternate frost and thaw, and depends upon the care with which water is drained away. A certain amount of moisture increases the strength of the slopes, but too much acts like a lubricant, and reduces the earth to a semi-fluid condition. Clay retains water and becomes pasty. Sand, if in a basin of water-holding earth, becomes a quicksand and is completely unstable. A mixture of sand and clay, the former favoring the access of water, and the latter preventing its escape, is at times the most difficult case to deal with. There is a certain "angle of repose", at which the tendency of earth to slip is overcome. This angle varies with different

kinds of earth, under various conditions of moisture. Wet clay is troublesome, and an angle of sixteen degrees is sometimes needed to secure it. Well drained clay, however, will rest at an angle of forty-five degrees, or a slope of one to one. With average gravel and compact earth, a slope of one to one is a safe angle, although first-class gravel will retain an almost vertical face for a considerable time. Sand varies greatly, "water sand" being no better than wet clay. Dry sand usually needs a slope of one and one half to one. Rules of this description cannot be laid down with complete accuracy, but serve to indicate what is to be expected with different soils. The qualities of soils are so variable that it is advisable to learn by observation what slope is needed for a particular piece earthwork.

The natural form of an earth slope when in permanent repose is a concave curve, with the flattest portion near the bottom. There is a careless tendency to leave the slope rather in the opposite form, with an outward curve. Convex, or straight, slopes will invariably slip until the natural form is obtained, and in cuttings and embankments approaching ten feet in height, care given to a proper construction in this regard is always profitable.

A dry stone wall at the foot of an embankment or cutting will protect the drain from slipping earth. A coating of sod is one of the best protectors of the slope, and a few inches of vegetable mould over the surface, with a liberal sowing of grass seed, is a measure sometimes adopted.

SWAMP ROADS.

Roads through swamps are always difficult to maintain. This is caused principally by water under the road—a lack of drainage. This is augmented by the fact that the soil is usually a vegetable mould, which becomes particularly soft and yielding when wet. The water soaking under the road, is drawn up into the entire grade, keeping the roads in a constantly soft, damp and yielding condition. It ruts readily, the coating of metal placed on the road is cut through, and a complete breaking up of the road then results.

The chief difference between a swamp road, however, and one on high land, is the matter of drainage—a complete proof, if other evidence were lacking, that the most necessary rule to be observed in making good roads is to provide good drainage.

In making a road through a swamp, every opportunity should be taken to carry the water away from the roadside. If this can be perfectly done, it will cease to be a swampy road, in spite of any difference in the quality of the soil. It is too often supposed that, by throwing up a sufficiently high grade, and piling on a great quantity of gravel, a permanent road must result. This will succeed in rare instances only, where the soil is of a firm quality. Care should be taken to see that outlets for drains are provided. A drain without an outlet is useless.

Pending the time when sufficient drainage can be had, the best that can be done is to lay a corduroy foundation, on this place a covering of earth, and a surface coat of gravel or broken stone. Rather than use the black vegetable mould, which becomes mucky when wet, it is advisable to cover the corduroy with clay loam, a gravelly loam, sand or clay. Sand, when slightly moist, makes a good foundation. If the case is one in which the road passes over an extremely boggy ground, a good bottom can sometimes be made by throwing in a thick matting of willows and other shrubs and branches, on which to place the covering of earth, then gravel or stone.

REPAIRING THE ROADS.

The repair of roads is as important as their construction. Neglect to keep roads in repair, failure to repair them when repair is first needed, adds very much to the cost of roads. A good road which is not kept in repair, very quickly becomes a bad road, and the object of the original expenditure is thus lost. To allow roads to degenerate for want of repair, means an immense waste of labor, material and money, which has to be made up in their re-construction. Wherever good roads are built, arrangements should be made for a careful attention to their repair.

Roads should receive constant attention. This is the most economical and satisfactory system of making repairs. Repairs should be made, not once a year, nor twice, but as soon as signs of wear appear. Special attention is needed in early spring and early fall, as at these two periods much can be done to prepare the roads for the ensuing seasons of particularly severe conditions.

Repair Under the Modern System.

It is one of the great advantages of the new system of road management being adopted by townships and counties, that men can be employed to work on the roads whenever and wherever needed. Neglect to keep the

A County Road in Hastings.

surface of a road smooth and in repair permits it to break up badly in the spring and fall, and the gravel or stone is largely wasted, being mixed with the mud from beneath. When this occurs a comparatively great expenditure is needed to make the road as good as before.

The overseer should give immediate attention to all emergency work rendered necessary by washouts, etc., either by personal or hired labor. He should be able to send a man over the roads as often as necessary to repair the effect of ordinary wear. Better still, a man should be employed to devote his whole time to a certain mileage of roads, to make repairs as they become necessary.

Where a council, as is commonly the case, provides materials, gravel, tile, etc., for road maintenance, out of the general funds, one man with horse and cart, and help when required, can keep in repair ten miles of gravel or stone road, at a cost not exceeding the statute labor along the road commuted at one dollar a day.

Smooth Roads Last Longer.

A smooth road, one with an even surface, will last much longer than will a road that is rough. Everyone has observed the hollows and pitch-holes formed on both sides of a wooden culvert or bridge projecting above the surface of the road. These pitch-holes form because every vehicle crossing the bridge drops down with a heavy jolt. Shallow at first, the deeper the holes become the more rapidly they increase in size and depth, because the pounding action of the wheels increases with the depth. Water collects and remains in these holes, and assists the wearing action of the wheels. The same process of wear is going on at many places in the road, other than at bridges and culverts. Wherever there is a roughness of any kind, a projecting or loose stone, a soft or hollow spot in the road, there is the same pounding action of the wheels assisted by the collecting of pools of water, which lie in every depression. In the spring of the year, on roads which have been drifted, and on which the snow lies unevenly, the shallow places melt first, leaving the gravel or stone road exposed in spots, with mounds of snow on each side. Here the same action goes on. Wheels drop into the depressions kept soft by the melting snow. Pitch-holes commence, and a few days of traffic break up the road, and do a great amount of injury.

Keep the Wheel Tracks Filled.

Wheel tracks very soon form after a road is first metalled with gravel or broken stone, particularly if not thoroughly consolidated with a roller. In forming these tracks, a certain amount of the metal is forced downward, by the wheels, but a greater portion is crowded outward. In this way, when wheel tracks are not filled, they become the weakest part of the road. Whereas the portion of the road supporting the wheels should have the greatest strength. These tracks or ruts should not be allowed to remain in the road. But, when they have formed, they should be filled by drawing metal into them again with a grading machine or by the use of a rake. By giving constant attention to these tracks until the road is thoroughly consolidated, keeping the road in proper shape, and the road metal in place, the wheel tracks become what they should be, the strongest part of the road, almost as firm as two lines of steel. When once a well-drained road has been given a proper form, and is thoroughly consolidated in this way, the subsequent cost of maintenance is greatly reduced.

Repair the First Year.

A road as commonly built for country traffic should receive as much attention the first year after construction as it would require in the following two years. This is especially necessary if gravel or stone is placed loosely on the road and left for traffic to consolidate.

Defects of construction will become apparent. Settlements and hollows should not be allowed to hold water and create pitch-holes for want of a load of metal. Drains should not be allowed to become obstructed, thereby saturating and softening the whole roadbed. Culverts should not stand full of water to be burst by the expanding ice because of neglected outlets. An almost inexhaustible list of these everyday occurrences could be mentioned, which in themselves apparently trifling, become in the aggregate of very great importance. Roadmaking is made up of details none of which can be overlooked, except at a loss. By giving constant attention to these, more especially for the first year after construction, better roads and great saving in cost will result.

GRADING MACHINES.

The grading machine is unquestionably the most generally useful of modern roadmaking implements, on roads of the class being built in Ontario. A road grader is a necessity in every township where good roads are being constructed. By their use, the cost of grading the roads is greatly reduced, and a great improvement in the making and repair of roads is effected. They are of greatest value in townships where gravel and broken stone are not to be had, and dependence must be placed on earth roads. At the same time, they are none the less a necessity in the construction and repair of gravel and broken stone roads; and even among stumps and stones, when properly handled, they work in a most surprising manner.

A few years ago the most pretentious roadmaking implement in any of the township municipalities was the drag scraper. The most widely used of the more modern implements is now the road grader, and this has almost revolutionized the cost of preliminary earthwork, while it is exceedingly useful in the repair of old roads. The majority of townships have only one, quite a number have two, while others have three and even four. With about three hundred in all throughout the Province, the outlay for graders, at an average cost of $250 each, represents a total investment of $75,000.

Road graders are now so commonly used in the construction and repair of roads, and their utility is so generally recognized, that it is scarcely necessary to urge their adoption. They are modern, labor-saving implements, which do their work better and more cheaply than can be done by hand, and that nearly three hundred townships of Ontario have purchased them is forcible evidence of their value. It is not their use which it now seems necessary to urge, but rather there is need of guarding against their misuse.

Councils have too often rested content with merely buying a grader, satisfied that in so doing they have done their whole duty. Unfortunately, the grading machine is not possessed of intelligence; it does not know when or how a road should be graded. So that, unless a method is established, and unless a capable man is engaged to operate it, the grader is likely to give but little service.

Plan the Season's Work.

A matter of first importance in making good use of a grader is to plan the season's work in advance.

The township road commissioners, councillors or a committee of the council (according to the local system of road management) should go over the roads early in the year and determine what grading is required.

This work should be staked out according to the definite width and dimensions of roads as required by township regulations. The grader, when it commences in the spring, should proceed to each piece of work consecutively, and should be in use continuously until all the grading is done for that year.

In some townships it is customary for the grading machines to go here and there over the township without method—one day on one side of the township, next day on the opposite side, then to another distant part, backward and forward, wasting a considerable part of the wages of men and teams in moving from one part of the township to another. By following a well-considered schedule the cost of moving the machine between the different pieces of work is reduced to a minimum.

Use When the Ground is Moist.

Arrangements should be made every spring to have the grader in use as soon as the ground is sufficiently dry. The soil is then in its best condition for manipulation, having been mellowed by frost; the roads are rough and most in need of treatment. Roads which are properly graded early in spring are at once compacted by traffic, and they will remain in their best condition all summer. If the work is left until late in the season, clay soils become baked and hardened, difficult to handle, and rough when finished. Sandy soils if loosened up late in the year will be much more dusty than if treated early in the spring, when they are damp and readily compacted by traffic.

An Active, Energetic Operator.

One of the first essentials in providing that the roads will be properly graded is to select the right man to operate the grader. He should be active and energetic, with some mechanical experience; one who will take

Near Orillia.

an interest in his work, who will make a study of roadmaking and who will be willing to follow the instructions given him by the township road commissioner or councillor having supervision of the work.

Employ a Permanent Operator.

When such a man is found he should be engaged from year to year so that his growing experience will render him more efficient. There are some townships which do not employ a regular operator, but instead allow the grading machine to be handled by anyone and everyone. In some cases it is even passed around in the performance of statute labor from beat to beat. Managed in so careless a manner, a grading machine will be a source of disappointment only.

Use the Horses for the Season.

The same horses should be used in operating the grader for an entire season, at least. "Green" horses are very awkward, will not pull together, waste much time, and even a reliable man as operator cannot, under such circumstances, perform good work. It is a great waste in many ways to attempt to use a grading machine with horses provided, as is sometimes done, as a part of statute labor. Horses used continuously become accustomed to the work, to each other, to the driver, and will produce much better results.

Traction Engine in Place of Horses.

Some townships, instead of horses, use a traction engine for certain work. Where one can be rented from a local thresher, it can usually be obtained very cheaply in the early part of the year. Where a considerable stretch has to be graded without turning, as in cutting off the shoulders of old gravel roads, a traction engine is much preferable to horses. It is more steady, and does not stop to rest.

Plan of Road.

The township regulations as to the width and dimensions of road should be closely followed in grading. These generally provide for a width of twenty-four feet between the inside edges of the open drains on roads of greatest travel, twenty feet on roads of moderate travel, and eighteen feet on roads of least travel. A rise of from half an inch to one inch to the foot, from the inside edge of the drain to the centre of the road, is ample crown for a new road, after the gravel or stone has been placed on it. More than this is unnecessary, and an injury. There is a tendency in the use of graders to crown roads excessively, and this should be guarded against.

Extent of New Road to be Graded.

Where gravel or stone is regularly used for surfacing roads, only such an extent of new road should be graded as can be metalled and otherwise completed in the one summer. If this is not done, the work of grading has practically to be done over in many cases before gravel can be applied, as the road will be so much cut by traffic and washed out by rains and freshets of the ensuing wet seasons. In addition, the road is left in a very soft condition, readily turning into a deep slough of mud. The ideal method for making a good road for traffic, and for conserving the road metal, is to roll down and consolidate the grade as left by the grader. On this should be placed a layer of broken stone, and this in turn rolled down for traffic.

Old Gravel and Stone Roads.

Road graders are of much use in the repair of old gravel and stone roads, in restoring the crown, but, unfortunately, it is no exaggeration to say that miles of roads have been ruined by misuse of graders in this work. Old roads are commonly flat, sometimes concave, with square shoulders at the side. In repairing these roads there may be a small amount of stone which has been crowded out by the wheels of vehicles, and which it is safe to draw again to the centre of the road. On no account should the square shoulders at the side be drawn to the centre of the road. These shoulders are composed of earth and sod, and if placed on top of the old

gravel or stone foundation will merely turn to slush in wet weather and utterly ruin the road. The only way to repair such roads is to cut off these shoulders, throwing them away from the road across the open ditch, if necessary, and then to restore the crown by placing a coat of new gravel in the centre of the road. This earth removed from the roadway may be used in filling an adjacent ravine, the approach to a bridge or culvert, for levelling the sides of the road allowance or in numerous other ways that local conditions will suggest; and it can often be handled most conveniently by means of a wheeled scraper.

Filling the Wheel Tracks.

Where gravel or broken stone is newly spread on the road, wheel-tracks very quickly form, some of the metal being forced down and consolidated, the remainder being crowded outward. If this metal is not drawn back to fill the wheel tracks, ruts are likely to form; whereas if these tracks are filled from time to time until the road is thoroughly consolidated they become almost as firm and hard as two lines of steel. An important use of the grader is to pass it up one side of the road, and down the other drawing the loose gravel or stone back into the wheel tracks. By this means a very much more serviceable and durable road is produced. A grader does this work more cheaply, but if one cannot be had, a man may be sent over the road with a rake from time to time until the wheel tracks are filled and well consolidated.

A ROAD ROLLER.

Every good road has two essential features:

(1) The foundation. The earth sub-soil is firm; well-drained naturally or artificially, making a strong, unyielding foundation.

(2) The wearing surface. The wearing surface is a smooth, hard and compact crust, which resists wear, sheds water readily, and distributes the concentrated wheel load over a greater area of sub-soil.

In carrying out these two principles, a heavy road roller is of the greatest value; and for economical, durable and serviceable roadmaking a roller is indispensable.

A road should first be properly graded, crowned and drained. The roller should then be used to consolidate this earth sub-soil so that the gravel or stone placed on it will not be forced down into loose earth, but will form a distinct coating. When this foundation is prepared, the metal can be placed over it, and rolled and consolidated into a distinct crust.

If a Roller is not Used.

If the gravel or other road metal is dropped from the wagon loosely on a soft earth foundation, water passes into the sub-soil as through a sieve. Wheels passing over the road when in such a condition at once sink into and rut not only the gravel but the earth beneath. Water is held in ruts, and each succeeding vehicle renders their condition worse. The road thus becomes less durable, since the gravel and stone, being mixed with the earth from beneath it, forms, when finally consolidated by traffic, a weaker crust, dusty in summer, muddy in wet weather.

Where a roller cannot be used, special care should be taken to keep the wheel tracks filled until they are thoroughly hardened, drawing the metal into them from time to time with a rake, or the grading machine.

The consolidation of loosely spread stone or gravel by traffic is a slow process, causing much inconvenience to travel, during which the earth or sub-soil becomes mixed with the stone. Earth intermixed with stone prevents the strong mechanical bond which clean metal will assume when the stones are wedged one against the other by a roller. The particles of earth, when wet, have a lubricating influence on the stone, and under the action of wheels the surface is more readily broken up. By the use of a roller the earth sub-soil can be first thoroughly consolidated. The stone should be placed on this foundation in layers, and each layer well compacted. In this way a smooth, durable, waterproof coating of stone, free from earthy material, can be laid over a firm foundation. A road should be made for traffic, not by it. To leave loose gravel and stone in the roadway is neither an agreeable method of constructing a road, nor will it produce the most durable road.

Further Benefits.

Among the further benefits to be derived from the use of a roller on country roads are:

(1) A good road is at once made for vehicles.

(2) A dirt track is not made by vehicles near the ditch, to avoid a pile of loose stone or gravel, so that the side of the road is not cut up in such a way as to interfere with surface drainage.

(3) Traffic is not inconvenienced in the fall by being forced to drive through loose gravel or crushed stone.

(4) The gravel or stone is not forced down into the sub-soil by the wheels and feet of the horses, is not churned and mixed with the earth, and there is in this way a great saving in the amount of metal needed on the road.

(5) There is a great saving in labor, and the roller is exceedingly useful in repairing the roads.

Crossing Bridges.

An impediment to the use of heavy rollers in a good many townships is the insufficient strength of bridges and culverts; and while valid in some instances, the objection is liable to exaggeration in others. Weak wooden bridges and culverts could in many cases be temporarily strengthened sufficiently; while in others, they could be entirely avoided by first completing the rolling on one side and then passing around a block or so to commence work on the other.

Using the Roller.

The amount of rolling which can be done in a day varies according to the quality of metal used, the kind and amount of binder, the thickness of the layer of stone rolled and the weight and type of roller. With broken limestone, rolled by a twelve-ton steam roller, the amount of stone compacted will average between forty and fifty cubic yards in a day of ten hours.

Rolling should commence at the side of the road, approaching the centre gradually. If the roller is first passed over the centre the loose metal is crowded out, and the shape of the road injured. The earth foundation should be rolled, and each succeeding layer up to the top dressing. When the latter is put on, the rolling should be continued in wet weather until the road is thoroughly compact and solid, able to resist, without displacement, the heaviest load passing over it.

Kind and Cost.

There are different classes of rollers. The horse rollers weighing six or eight tons will do if a steam roller cannot be afforded, but the horse roller is not sufficiently heavy for the best results. It has to be used much longer than the steam roller. The feet of the horses, in exerting sufficient strength to move the roller, sink into and disturb the road metal, and injure the shape and quality of the roadway, while on hills it is at a disadvantage.

The steam rollers are of various weights, ranging from eight to twenty tons. Rollers of fifteen tons weight are those generally used by the towns and cities of Ontario. The cost of horse rollers is usually about $90 per per ton, or from $400 to $600 each. Horse rollers are, however, generally so constructed that the weight may be increased by iron castings; so that a roller of five tons may be made to weigh about eight. Steam rollers cost about $3,000. For operation, a horse roller, with two teams, will cost $6 per day. A steam roller will cost $10 a day, including interest and depreciation, but will do several times the amount of work done by a horse roller, so that the saving in operation is considerable.

Cost per Mile per Year.

Hastings and Wentworth are using steam rollers on their county roads. In Simcoe county, both steam and horse rollers are used. Numerous townships report the use of horse rollers on their roads.

The objection to the purchase of steam rollers by townships is their cost. It is, however, but a matter of time when this will be overcome. The price may or may not be reduced, but in the meantime an appreciation of good roads will grow, the value of good roads wil be more realized, rural population, wealth, and traffic must increase, so that all influences will tend toward the gradual use of rollers by townships.

A roller, at first sight, may appear to be an expensive implement. But this should be considered in its relation to the work it will perform. The cost is not confined to one mile of road, but is spread over a great many miles; is not used up in one year, but will last for many years. The cost per mile of road per annum is but slight, and the saving through greater durability will return the outlay many times.

A ROCK CRUSHER.

A rock crusher is a great aid to economical and efficient road building, particularly where gravel is scarce or of a poor quality, and where stone can be obtained. A gravel road is more easily built than a broken stone road, but the latter properly constructed is much more durable and repays the extra cost.

Stone for roadmaking is now rarely broken by hand. With existing high wages and scarcity of labor, hand broken stone is scarcely to be considered in Canada, as a material for roadmaking. In occasional instances prisoners at the county gaol take exercise at a stone heap, or old men who would otherwise have to be cared for by charity are allowed to earn a little money by breaking stone for a municipal corporation; but the quantity of stone prepared in this way is very limited. By means of the stone crusher, the difficulty of higher wages, and scarcity of labor is largely overcome, and broken stone, for roadmaking, is being placed within the reach of all.

The work is done cheaply and quickly, and while more expensive than gravel, a much more durable road can be constructed. Even in the treatment of gravel, a crusher is often very valuable, especially if it contains many large stone and boulders.

Types of Crushers.

These machines are made after various patterns, the main division being into rotary and jaw crushers. Some of the smaller sizes are set on wheels, and may be moved readily from place to place. Others are for stationery work, in a quarry, or at a point to which stone, field boulders, etc., are brought to be broken. They are operated by steam power, a traction engine or stationary engine, or by an electric motor, as circumstances render most advantageous. Some municipalities owning a steam roller obtain power from it, but this is apt to injure the roller.

Operation.

Where field boulders are plentiful, the property owners are very glad, as a rule, to have a means of disposing of them, especially when they can be hauled in winter time. If the stone is stored for future crushing it should be put in piles on both sides of where the crusher is to be set up. Much can be saved by setting up a crusher so that it can be fed directly from the wagons, instead of wheeling the stones in barrows. To permit of this, in Brantford, the crusher is permanently set in an excavation on a hill-side at the river, wagons driving over the crusher; while in Berlin a platform is erected to the level of the crusher. Where quarry stone is used, it should be crushed at the quarry, as less handling is then required. The broken stone should always be received into bins from the crusher, and from these a wagon containing a quarter of a cord can be loaded in from two to four minutes.

A Rotary Screen.

One of the most valuable features of a crusher is that by attaching to it a rotary screen the crushed stone may be separated into grades according to size. By placing the coarse stone in the bottom of the road, and the finest on top, a smoother and more durable road is obtained.

The size of crusher commonly used is such as will crush an average of seventy-five to one hundred cubic yards in ten hours. Where field stone is used, or where quarries are numerous throughout the township, a portable crusher is desirable; but if the crusher is to remain stationary for a considerable time, a portable crusher is at a disadvantage. The screen used should be of the rotary type, to which the stone is carried in a chain elevator. The screen is usually perforated so as to separate the stone into four grades—the stone dust or "screenings"; such as will pass through a one inch ring; such as will pass through a two and a half inch ring; and the larger and irregular sizes. From the screen the stone passes to bins, and from these through chutes to the waggons. For a crusher of the capacity suggested, an engine of about fifteen horse-power is desirable.

The Cost.

The cost of crushing varies, and is different even for different localities in the same township, but where the haul from the crusher to the road

does not exceed half a mile, and apart from the cost of quarrying, the daily cost of crushing is approximately as follows:

Foreman	$2 00
Engineer	2 00
Two men feeding at crusher	3 00
Two teams hauling away	6 00
Two men loading at quarry	3 00
Team hauling to crusher	3 00
One man at bin	1 50
One man spreading on road	1 50
Fuel, oil, waste, etc.	2 00
	$24 00

The cost of a crusher varies from time to time, and intending purchasers should communicate with the manufacturers, who can each give their figures. The cost of crusher and screen may be placed at about $1,000 or $1,100, but this is merely an approximation. The following information supplied by township clerks and others will indicate the general practice in a number of townships:

Crushing Stone for Lanark County Roads.

Ameliasburg.

A portable crusher purchased in 1899; capacity about ten tons per day; engine rented for $7 or $8 per day with two men; the revolving screen not much used, but the stone sometimes screened into two grades; field stone used sometimes, delivered free at crusher, or at a cost not exceeding five cents per cubic yard; employed in operation, generally three or more teams with drivers, one engineer, man to feed the crusher, and two or three to see that the crushers are kept running and assist with crushed stone; wages $1.00 to $1.50 for ten hours labor; a grader was purchased the same year and found very valuable in properly adjusting the roadbed to receive the crushed stone or gravel.

Belmont and Methuen.

A portable crusher purchased in 1903, cost $900; capacity, sixty cubic yards per day; engine rented for $3.50 per day; field stone used costing $1.50 per cord piled at the crusher; employed in operation, five teams at $2.50 per day, and eight men at $1.25 per day.

Bertie.

A portable crusher bought in 1897, capacity about sixty cubic yards per day; the engine rented or a contract usually taken by owner of engine costing on an average about 75 cents per yard for quarrying and crushing. A screener has been used separating stone into two sizes, fine and two and a half inches in diameter. Quarry stone generally used costing about $1.50 per chord piled at crusher; contractor employs about four men, and the township teams the crushed stone, paying an average of about 40 cents per yard, depending upon the distance to be hauled.

Brighton (Township.)

A portable crusher; the township bought half interest from the Village of Brighton for $250; capacity, ten cords per day; engine, fourteen horse power rented for $5.00 per day; field stone used, and are using a stone wall; wages, men $1.25, team and driver $2.50 for ten hours; number of teams according to distance the broken stone has to be drawn.

Burleigh and Anstruther.

A portable crusher purchased 1904; cost with elevator, $1,000; capacity fifteen cords per day; thirteen horse power engine owned by township; cost, $700; stone is not screened but broken into one inch diameter and smaller; field stone used. The clerk says: "Two teams with three men would keep crusher going if the stone were in piles and had not to be pried out of ground, and the draw was not over five hundred yards. There are employed in operation: 1 foreman, wages $3.00; 1 engineer, wages $2.00; four teams, wages $2.75 in half mile haul; 1 man on crusher, wages $1.50; three men to feed crusher, wages $1.50 each; three men to load, $1.50 each; 1 man to spread, $1.50. Above is average work; it varied with lenght of haul of both rough and crushed stone. Experts stated it was the best crushed stone they had ever seen. Repairs cost nil."

Camden.

Portable crusher purchased 1903, cost $1,075; three wagons cost $450; stone is not screened; engine rented for $5.00 per day including engineer and team to draw water; quarry and field stone used, being drawn to crusher as required; employed in operation, foreman, $2.00 per day; four men to feed crusher at $1.25 each per day; four men to load stone at $1.25 per day each, two teams to draw stone to crusher at $3 per day each; two teams to draw stone to the road $3 per day each.

Cornwall Township.

A portable crusher purchased 1900; cost $1,800; capacity, six to eight cords per day; engine rented for $2.50 per day; field stone used costing at crusher $2.50 per cord; screen not used; wages, men $1.25 per day; teams $2.50 per day.

Cumberland.

Our machine is portable; made in Chicago; bought July, 1904; its weight, 13,675 lbs.; in first-class repair, all wearing parts new; the bottom price for new machine with rotary screen and attachments f. o. b. Ottawa, is $1,300; ours cost $800 with elevator and chute screen, an extra set of new dies and 70 feet new 8-inch belting, rotary screen about $125 extra; capacity, about six toise (35 toise in six days); did not run much over half time as we had not teams enough to keep it clear; the machine would handle about one toise an hour; a 13 horse power engine is rented at $4.00 per day (10 hours); the crusher is set in a quarry, which is side hill (lengthwise with hill), the broken stone dropping into a cross chute which delivered them on a sloping platform at foot of hill, high enough for wagons to drive under. We intend doing away with this arrangement and putting in a rotary screen with stone bins, as most of our work will be on level ground. We find for concrete work that only the fine dust should be taken out and stone screened to about $1\frac{3}{4}$ inches, especially where fillers are used. We have no experience in making stone roads yet. To quarry stone costs about $3.50 a toise. Two good men can feed the crusher with two carts and three men delivering stone on platform where the haul is not more than say thirty yards. We paid men $1.50 a day, teams $3.00 a day; day's work for team five trips, two miles; load 1 1-2 yards broken stone.

Derby.

A portable crusher; cost, $1,000; capacity, sixty cubic yards per day; engine rented for $5.50 per day (owner to find belt, water tank, engineer and oil, the council to furnish fuel, water and team to assist in moving); both field and quarry stone used, costing about 25 cents per cubic yard piled at the crusher; employed in operation, about six teams with teamsters at $2.50 per day, and six men at $1.50 per day.

Drummond.

A portable crusher bought, second-hand, in 1897, price with screen and chute for loading, $750; capacity, twelve to fifteen cords per day; the engine owned by the township; both field and quarry stone used, costing $3.00 per cord, piled at the crusher; the field stone is put in the bottom of the road with limestone or granite on top; in operation there are employed two teams to handle the crusher, at $2.50 each per day; engineer $2.00 per day, feeder $2.00 per day, six other men at $1.50 per day, fuel $2.00 per day, total $20.00 per day.

Hawkesbury East.

A portable crusher purchased 1902; capacity, twelve tons per day; a twelve horse power engine owned by township; stone screened into three grades; field stone used costing $3.00 a standard, piled at crusher.

Hawkesbury West.

A portable crusher purchased July 11th, 1901, at a cost of $1,050; operated by a 13 horse power traction engine owned by the township; stone screened into three grades; field stone used costing $3.00 per cord at the crusher.

Luther East.

A portable crusher, purchased second-hand in 1901 for $450; capacity, twenty-five cubic yards per day; engine rented for $3 per day; field stone used costing 30 cents per cubic yard at the crusher; daily cost of operation varies according to haul, but is about as follows: Engineer, $2.00; four teams with teamsters, $14.00; man feeding, $1.50; man loading stone on wagons, $1.50; two teams with teamsters delivering, $7.00; man spreading, $1.50; total, $27.50.

Montague.

A portable crusher purchased in 1903, cost with screen and wagon, $1,300; capacity, ten to fifteen cords per day; 17 horse power traction engine, owned by the township, cost $1,500. Stone is separated by the rotary attachment into different sizes to suit different conditions; both quarry and field stone are used, costing $1.50 to $3.00 per cord according to condition and distance to haul; wages, men, $1.50 per day, teams, $3 per day.

Oxford West.

A portable crusher purchased in 1902; cost, crusher and new grader, $1,100 and old grader; screen not used; capacity, fifteen cords per day; engine rented for $3.50 to $4.00 per day; field stone sometimes crushed when donated by farmers, but the crusher more especially used in reducing coarse gravel; the number of teams and men employed varies according to the distance the material has to be drawn; usually employ six men with the crusher, and teams enough to draw to the desired location; wages, $1.50 for men and $3.50 for man and team per day.

Pickering.

A portable crusher purchased in 1903, cost $1,000, capacity eight toise per day; engine rented at $1.00 per hour; field stone used; cost $5.50 per toise piled at the crusher or in some cases for cost of hauling; employed in operation, overseer, $2.00, four men piling and assisting to feed at $1.75 each; three teams delivering broken stone on road at $3 each; three teams drawing stone from field to crusher at $3.00 each; if crushing from a pile the last item goes out.

Richmond.

A portable crusher purchased 1903; cost, $900; capacity, six toise per day; a 14 horse power engine rented for $3 per day; field stone used; employed in operation three to five teams at $2.50 per day and five men at $1.25 per day.

Smith.

A portable crusher purchased 1899 for $800, screen cost $150; capacity, ten cords per day; engine rented at $5 per day; field stone used costing, piled at crusher, $2.50 per cord; the screen not used; cost of operation about $30 per day.

Saltfleet.

The crusher purchased in 1903; cost with screen and all attachments, $1,000; the crusher is portable and can be set up in one hour if in a favourable place; weight in all about eight tons; last fall we moved twenty-four miles in one day with two teams, sometimes we move with engine, which takes it along very nicely; the capacity of the crusher is about twenty cords per day. I have often seen

one-half cord go through in ten minutes, but that depends on the grade of broken stone being made, and the system of getting the stone to and from the crusher. I ran one of the same crushers for the county in 1899 and on one job we crushed for thirty-six days, an average of fourteen cords per day. That is about as good as we can do; but for a day or two have crushed sixteen cords per day when stone is handy. We rent the engine for $4.50 to $5.00 per day for man and engine, the township furnishing fuel and water. The crusher is very easily run, almost any up-to-date engine will operate it and give steam to run the drill at the same time. We have had the crusher run with a twelve horse power engine, and give good satisfaction. We set up as convenient to stone as we can, generally down below the quarry, and then use wheelbarrows. But if not convenient to the quarry, we use carts, and set the crusher on level ground, build platforms level with crusher, and dump the stone on crusher. If the job is small, we use one team and an extra wagon at the crusher; that is when the job is so small that it will not pay to set it up, with a platform. Our crusher last season averaged about twelve cords per day. We crush for our own township, and rent to the county for $6.00 per day for man and crusher. For making new roads we generally screen. The two-inch mesh screens about like common gravel; about 1¼ inch screenings make a very good top dressing; the manufacturers put out a screen not quite coarse enough. We have them made out of coarse wire, making the mesh about one-third of an inch square; for repairing old roads we do not screen, but crush say about 1 inch, making a very nice job. We can get stone quarried for $1.00 per cord, (five years ago in the county for 80 cents per cord quarried). It takes two horses and two carts, a man to run the horses and dump the carts, two men to load the carts, one man to feed crusher. If carried to the crusher with wheelbarrows, four men will put up twelve cords of decent stone per day; what I mean by "decent stone" is stone that is not too small; but about what a man can handle makes the best time. We have used both field and quarried stone. Our total cost, drilling, blasting, crushing, and teaming, two miles or three miles, is about $4.00 per cord. This includes all expenses and the job has to be well handled to keep that low in price. These crushers have elevators; we can elevate 10 feet high; sometimes we have a bin holding about six cords, and the wagons load from a chute; if there is not a bin, we have an extra wagon, more than we have teams.—(Report by Township Road Commissioner.)

St. Vincent.

A portable crusher; cost with screen, five carts and three sets of harness, $900; capacity, seventy cubic yards per day; engine rented at $5.00 per day; stone screened into three grades; field stone used and brought a distance of two miles to crusher for 40 cents per yard. In operation there are employed nine men and three horses and carts; wages $1.25 per ten hour day for men, and $1.00 each for horses.

Winchester.

A portable crusher purchased in 1900; cost, $1,000; capacity, 60 cords per day; sixteen horse power engine, owned by the township; cost, $875; field stone used, costing $2.00 per yard piled at the crusher.

A portable crusher; cost, $900; screen, $175; capacity, sixty cubic yards per day; engine rented for $6.25 per day with engineer and one team;

Yonge and Escott Rear.

both field and quarry stone used, piled at the crusher by statute labor; four teams are generally employed to draw the crushed stone where required, and to draw water for the engine; foreman paid $2.50 per day, the balance of the work done with statute labor.

CONCRETE.

Concrete is one of the most important and valuable materials of modern construction. The facility with which it can be moulded makes it suitable for a great variety of uses. It is, when properly made, of good materials, more durable than stone masonry, and costs less. While costing a little more than timber for bridge abutments and culverts, it is so much more durable that after a term of years, it is much the cheaper of the two. In road and street works it is used for concrete tile, bridge abutments, arches and short span bridges and culverts, bridge floors, foundation for pavements, curbs and gutters, sidewalks, retaining walls, and other purposes.

Concrete can best be regarded as a mixture of mortar and broken stone, the mortar being formed from a mixture of sand and cement. Given a sample of broken stone in a vessel, the requisite proportion of mortar can be gauged by pouring water into the vessel until the stone is submerged. The quantity of water used will indicate the amount of mortar required to completely fill the voids in the stone. The proportionate amount of cement needed to fill the voids in the sand can be gauged in the same way. The proportions of cement, sand and broken stone obtained in this way would provide, with perfect mixing, a mortar in which the voids in the sand are filled with cement, and each particle of sand coated with cement; it would provide a concrete in which the interstices of the stone are filled with this mortar, and each stone coated with mortar. This would be the case with perfect mixing, and would provide a theoretically perfect concrete. Perfect mixing is not possible, however, and it is necessary to provide an amount of cement in excess of the voids in the sand, and an amount of mortar in excess of the voids in the stone.

Gravel vs. Broken Stone.

In place of using cement, sand and broken stone, concrete may be made by mixing cement and gravel, as suitable gravel for this purpose, is itself a mixture of sand and small stones. The most suitable gravel for concrete is one which is a close, compact mixture of sand and pebbles, varying from very fine to coarse, so that there is the least possible percentage of voids in the mass.

There is some difference of opinion as to the relative strengths of gravel and broken stone in concrete. The natural inference is to suppose that a rough, irregular surface will secure greater adhesion than one that is smooth. However that may be, there is little reason to doubt that gravel will make a good concrete, but there is a right and wrong way of using gravel. It is not uncommon to find cement and gravel, just as it is taken from the pit, mixed to form a concrete. Remembering the proper composition of concrete and placing beside this the fact that gravel usually contains sand, but not in any definite proportions, and that some pockets of "gravel" may be almost completely sand, while in the layers adjoining

there may be little if any sand, and that many gravel beds contain much clay or earthy material, it will be readily understood why it is that, in some cases, concrete mixed in this way may be successful, yet it will always be uncertain and hazardous. The only safe method is to separate the stone and sand composing the gravel by screening, then to mix cement, sand and clean stone uniformly and in their right proportions.

The Proportions.

The proportions of cement, sand and broken stone (or cement and gravel) to be used in mixing concrete, vary for different classes of work. With proper mixing and good materials, a satisfactory concrete for walls or bridge abutments can be formed from cement, sand and broken stone, in the proportions of one of cement, three of sand and six of broken stone. It is recognized that the greatest strength in concrete can be obtained by making the mortar rich in cement, rather than lessening the quantity of stone, but beyond providing for a strong adhesion of mortar and stone, little is

On the Simcoe County Roads, near Collingwood.

gained by making the mortar materially stronger than the stone. For an arch or bridge floor it will be well to use a richer concrete, in, say, the proportions of one of cement, two of sand, and four of broken stone.

For concrete tile, one of cement to three of fine gravel is desirable. Where natural gravel is used in place of sand and broken stone for walls and abutments, the proportions should be one of cement to six or eight of gravel. Fine gravel requires more cement than does coarse gravel. For an arch or bridge floor, the proportion may be one of cement to five of gravel.

Rubble Concrete.

The cost of the abutments may be lessened, where they are of sufficient thickness, by the use of rubble concrete. The casing or curbing must be built up as the laying of the concrete proceeds. Within the casing and

firmly tamped against it, there should be placed fine concrete to a thickness of about six inches. This will form a shell for the abutment, inside of which large stones may be placed in rack-and-pinion order, ends up. There should be a space of at least two inches between the stones, filled with fine concrete, and all firmly rammed. The outer shell of fine concrete should always be kept built up six inches or so in advance of the rubble work. The rubble should be laid in layers, and each layer well flushed with a layer of fine concrete.

Wet or Dry Concrete.

The amount of water to be used in mixing concrete is a subject of some controversy, some engineers preferring to mix a moderately dry concrete, others believing it better to have it very wet. Some consider that it should have about the consistency of freshly dug earth; others that it should flow more readily. There would appear to be a medium point, at which the best results are reached, the concrete being merely such that it can be consolidated readily, and well tamped against the casing, so that the mould will be entirely filled, and the surface of the work smooth, when the casing is taken away. With sufficient water, there is reason to believe that the hardening and crystallizing of the concrete is more perfect, and that a more compact stone is produced. The materials forming the concrete should first be mixed dry. The water should then be slowly added, and the whole thoroughly intermixed until it is uniformly dampened.

Clean Material.

It is very necessary to see that the sand and stone used in making the concrete do not contain an undesirable amount of clay, loam, vegetable or other matter which will act as an adulterant, and result in a weak and friable concrete. If such matter is intermixed with the stone it is well to flush it away with a stream of water. Large stone used in rubble concrete should be also cleaned in this way. It is well, particularly in hot weather, to dampen the stone before mixing it with the mortar. The heat of the stone in hot weather causes the moisture of the mortar to evaporate, causes it to set too quickly, and at all times there is more or less absorption from the mortar in immediate contact with the stone, unless the stone, as intimated, has been dampened.

Mixing.

The concrete should be mixed at a point convenient to the work, on a platform which is sometimes specified as water-tight, but the concrete will quickly make it so. It should be mixed in just such quantity as is required, and a constant stream kept passing to the work. It should be laid in layers, and each layer thoroughly rammed until moisture appears on the surface. Concrete which has commenced to harden before being used, should be thrown away, as it will not set a second time.

The platform should be about 14 by 16 feet, a size on which four men can conveniently work, mixing one cubic yard at a time. The mixing should be done with short handled, square cornered shovels, the concrete being not merely turned over, but scattered by a twirling motion of the shovel. This twirling motion cannot be given with long-handled shovels. Energetic workmen who scatter the concrete in this way, can mix the materials more perfectly in three handlings, than indifferent men can do in half a dozen handlings by lazily turning the concrete over. The more

thorough mixing can be aided by a man or boy raking the pile over, as it is shovelled together by the mixers. Some contractors prefer to use hoes in place of shovels, especially if workmen cannot be obtained who will handle the shovels properly. Good workmen can mix a batch of concrete, one cubic yard, in fifteen or twenty minutes, the difference in time depending on the materials used, and the amount of mixing required. Mixing machines of varying merit are on the market, and as a rule do the work more thoroughly than by hand. The strength and durability of concrete depends on the thoroughness with which it is mixed, but the work must be done quickly before the concrete begins to set.

When the work ceases for the day, or is for other reasons interrupted, the surface of concrete should be kept damp until work is resumed. When work is in progress in hot weather, any exposed surfaces should be kept damp and protected from the rays of the sun; otherwise the surface will, in setting too rapidly, be interlaced with hairlike cracks which, filling with water in winter, and freezing, will cause the surface to scale off. The same scaling sometimes results from laying concrete in frosty weather.

CONCRETE TILE.

Concrete tile are now being largely used throughout the Province, for small culverts. Where properly made, concrete tile culverts have given the greatest satisfaction, and rarely is there any complaint regarding them. They are not seriously affected by frost. In some municipalities they have been in use for from fifteen to eighteen years without renewal, and still appear to be as good as when first laid. Among the chief points to observe are that they shall be made of good materials, the concrete carefully mixed, and that they are not too small. The size is controlled to some extent by the depth of the side drains below the graded roadway, as it is necessary that there should be a foot of earth over the pipe. It is not desirable to use pipe less than eighteen inches in diameter if the situation will permit; but two smaller lines of pipe may, as an alternative, be laid side by side. The objection to small pipe is that they are liable to be stopped up.

Concrete is Permanent.

The construction and repair of wooden culverts has become, in numerous townships, a serious drain upon the yearly appropriation available for road purposes. In some cases as much as half or two-thirds of the grant from the general funds is absorbed in this way, a matter of from $1,000 to $2,000 annually. The number of these culverts on country roads varies greatly. Ordinarily half a dozen are needed for each mile of road if proper drainage is provided. By replacing these, as required, with permanent concrete culverts, this annual expenditure can be almost wholly wiped out.

Making the Tile.

The making of concrete tile for culverts is not a difficult matter, and can be undertaken by the municipalities themselves, although in numerous cases they are now manufactured as a private enterprise. Just such a number of pipe as are actually required for the season's work need be manufactured; the implements required are inexpensive, and the pipe may be made by the municipality for actual cost, which, after a little experience, can be reduced to a very small amount.

The outfit required consists of two cylinders; the larger hinged, the smaller a spring cylinder; bottom and top rings; and a tamping iron. The one cylinder forming a core, sets inside the other, leaving a space between the two equal to the thickness of the finished concrete pipe. These can be procured from the manufacturers of roadmaking machinery. By "spring cylinder" it may be explained, is meant such a cylinder as would be formed by rolling a steel plate into a tube without sealing the joint. With the smaller of these cylinders the edges overlap or coil slightly, but are so manufactured that the edges may be forced back and set into a perfect cylinder. In the case of the larger cylinder, the shell is cut into two parts with hinges on one edge, and latches on the other. Bottom and top rings shape the bell and spigot ends of the pipe.

The two cylinders, with joints flush, are set on end, the one centrally inside the other, and on the bottom "ring," which in turn rests on a firm board bottom. The concrete, made of first-class cement, and clean, screened gravel, in the proportion of one of cement to three of gravel, is then tamped firmly into the space or mold between the two cylinders. The tamping-iron used to press the concrete into place is so shaped as to fit closely to the cylinder.

The concrete is allowed to stand in the mold for a short time, when the cylinders are removed; the outer and larger cylinder by unfastening the clamps, and swinging the shell open on its hinges; the inner cylinder by removing the fastenings, so as to allow the edges to again overlap, returning to the shape of a coil. The outer cylinder having thus been opened and the inner one made smaller, they can be readily taken away, and the concrete pipe is then left until thoroughly hardened.

The concrete adheres closely to the metal, and to overcome this it is necessary to keep the molds well oiled. This should be done after each tile is made, and when the molds are by this means kept perfectly clean, a smooth and uniform pipe of good appearance will be obtained. A good mixture for oiling the molds is composed of two parts of machine oil to one part of coal oil.

Mixing the Concrete.

To secure a durable pipe it is necessary to exercise much care in mixing the concrete. Portland cement should be used. If gravel is used, it should first of all be clean. Any earthy material, clay, or vegetable mold, will create a flaw in the pipe, which will lead to its early destruction, and durability is the quality most to be desired. The gravel should be of a size that will pass through a one-half inch screen, and should be of varying sized grain, in such proportions as to make a compact mixture. The gravel forms the greater part of the mass of concrete, and it is evident that the results will depend very largely on the quality of the gravel.

The materials should be mixed in the proportion of one part of Portland cement to two parts of gravel. They should first be turned over in a dry state until thoroughly intermixed and of uniform color. Water should then be added. This, like the gravel, should be clean, and there should be just enough to moisten the mass of concrete, making it of the consistency of a stiff mortar. An excess of water tends to injure concrete in various ways, and is especially to be avoided in the manufacture of tile, as the tamping cannot be properly performed when too much water is used. When the water has been added, the mixture should be made uniformly moist, by turning it over three times with a shovel. The concrete is then ready to be placed in the molds, in which it should be firmly and vigorously tamped.

Mix the Concrete in Small Quantities.

Such a quantity of concrete should be mixed as can be put in the molds before the process of setting has commenced, and it is therefore of importance to know how long the brand of cement used can be worked before setting begins. A moderately slow setting Portland cement is necessary for this work. Ordinarily it is best to mix enough to fill one mold at a time.

Remnants of concrete which have commenced to set should be thrown away, and under no circumstances should they be worked up again and used, as they are certain to cause a defective pipe. Defects which do not appear until after the tile have been placed in a culvert and covered with earth, cause not merely the loss of the pipe, but a considerable outlay for labor is wasted as well. The concrete should be handled quickly. Two men are needed, one to shovel it into the molds, and the other to tamp it.

Removing from Bottom Rings.

Until the concrete has hardened sufficiently the molds should not be disturbed. When the pipe has attained sufficient strength (which it should do in from five to seven hours, according to the temperature of the atmosphere, and the kind of cement used), it can be taken off the bottom rings. To enable the pipe to set satisfactorily they should be dampened every day for several days, if the weather is dry, and should be protected from the direct rays of the sun in hot weather. They should not be used for some time after being made, but should be allowed to season for from four to six weeks.

The molds for manufacturing these tile may be obtained in various sizes, the more common being for tile ranging from ten to thirty inches in diameter. The molds are such as will manufacture pipe two and one-half feet long. One set of bottom rings—those for forming the bell of the pipe—go with each set of molds, but it is advisable to have about three sets of bottom rings for each pair of cylinders, to permit the maximum number of pipe to be made in a day.

Laying the Tile.

If the best results are to be obtained from the use of concrete tile culverts, the tile must be put in place with reasonable care. It is, in the first place, necessary that they shall be laid with a good fall on a regular grade to a free outlet, in such a way that water will not stand in them. Lay the tile with the spigot end down grade, and make the joints tight with cement mortar. If the joints are open, water will work along the outside of the culvert, and finally make a considerable channel, which will allow the culvert to get out of line and finally result in a "cave-in." To prevent the water finding its way along the outside of the pipe, it is advisable to protect the ends with concrete, stone or brick head-walls.

Excavate a concave bed for the pipe, with depressions for the bell of the pipe to rest in, thus securing an even bearing, without which a heavy load passing over before the culvert has properly settled into place may burst the tile. Tile cannot be used in very shallow culverts, but must have a sufficient depth of earth over them to protect them from the direct pressure of heavy loads. The depth of covering necessarily increases with the size of the pipe. At least a foot of earth over the top is advisable in every case; but for culverts of two feet in diameter or over, this should be increased to at least eighteen inches.

The earth should be well packed and rammed around the tile to secure a firm bearing, and light soils should not be used immediately over or around the culvert. A heavy clay, a firm gravel, or a compact sand will answer, but vegetable mould, water sand and light loams are subject to washouts.

As to the outlet, the culvert should be set nearly flush with the surface of the ground. If set higher than the surface, the fall of water will wash out a depression, and in time will undermine the end of the culvert. A too rapid grade will have the same effect, and it is well to cobble-pave an outlet where this undermining action is likely to occur.

ARCH CULVERTS.

Concrete or other durable culvert tile are to be recommended for small waterways, where there can be no doubt as to their sufficiency to accommodate the maximum flow of water. A difficulty with tile, however, has been that they are frequently used in places where a larger waterway should be provided; and while they may be large enough for the greatest flow of water for a period of years, yet there is apt to come a time of sudden flood or freshet when they are subjected to a rush of water for which they have not capacity, and a washout results.

For this reason, when putting in culverts which it is desired shall be permanent, care should be taken to provide a waterway of ample size for the unusual, not the usual, amount of flow. To this end, arch culverts of concrete or stone masonry should be employed, or concrete culverts with a flat top may be used for the smaller waterways. Concrete is made of gravel and Portland cement, or, of broken stone, sand and Portland cement. If properly made, concrete is not only cheaper, but is more durable than stone masonry.

The cost of a concrete culvert will range from about $4.50 to $6.50 per cubic yard of concrete in the structure. The variation is created by a number of details—the availability of gravel, the cost of Portland cement, the cost of labor and other items. The first to be constructed by a municipality always costs more than subsequent work.

A stone arch is so designed that the stone will remain in place without being held together by mortar. Concrete arches, on the other hand, are dependent upon the conhesive strength of the materials. Good workmanship and good materials are therefore of exceedingly great importance in building concrete arch culverts. It is also essential that the side walls of arch culverts shall rest on a firm stratum of hardpan, gravel, compact earth, or other unyielding base, so that there will be the least possible settlement. If settlement occurs to any extent it is rarely uniform, and the arch is thereby distorted and cracked. Usually it is necessary to excavate, for the side walls, a depth of about two feet below the bed of the stream. A certain depth is necessary in any location in order that the side walls may not only be safe from settlement, but also from the undermining tendency of the stream.

FLAT CULVERTS.

A concrete culvert with a flat top can be adapted to any location where stone masonry walls with a flag-stone top could be used and is a parallel case, in which artificial stone or concrete is used in place of natural stone.

In this type of culvert the principal matter to guard against would be a break in the cover stone. There is no difficulty, for short spans up to at least six feet, in proportioning the thickness of this cover for any possible load to which the culvert would be subjected. A possible cause of failure

would arise from the displacement of the side walls by frost, which might break the cover stone; or by uneven settlement from any cause.

Care should in every case be taken to see that the side walls are carried to a sufficient depth to a secure foundation; two feet is sufficient for most situations, especially where a layer of hardpan, firm gravel, or rock, is close to the surface. The greater the span, the more necessity there is for a deep or a solid foundation.

The strength for the cover stone, especially culverts of greater span, say six or eight feet, would be much increased by having barbed or smooth fence wire stretched back and forth across the culvert, which should be fully imbedded in concrete, but as close as possible to the bottom of the cover-stone.

It is desirable that a layer of earth, six inches or more in depth, should be over the top of the culvert. If this is impossible, and the top of the culvert must be level with the road surface, the cover stone should have a finishing coat rich in cement, in the proportions of one part of cement to two of sand. Otherwise a culvert of this description may be made throughout of

A County Road in Hastings.

Portland cement and gravel, mixed in the proportions of one of cement to six parts to gravel. Wing and parapet walls may be built as the situation of the culvert requires.

Where a small waterway only is required, a culvert can be cheaply and easily made by constructing a square box frame, and packing the concrete around it.

CONCRETE ABUTMENTS.

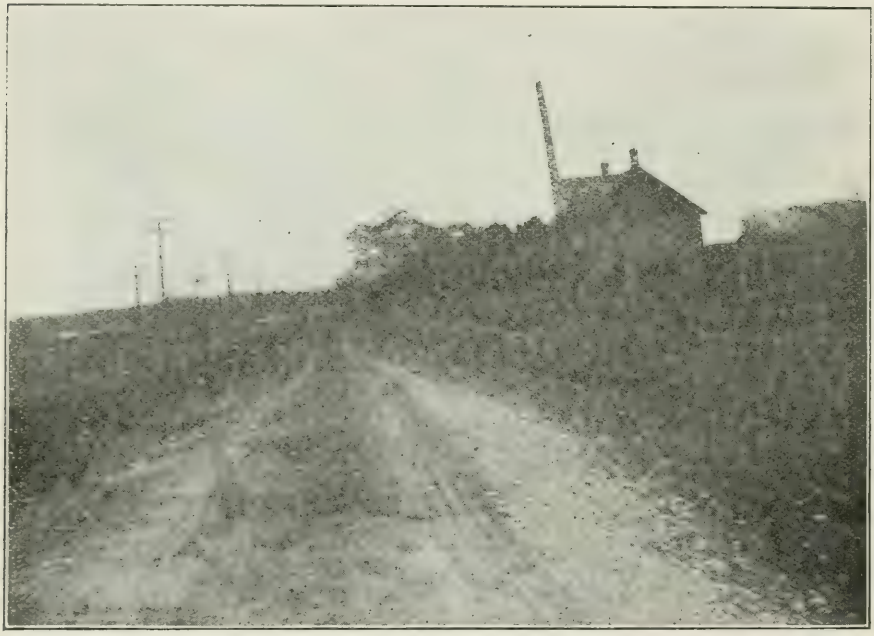
Concrete, in the construction of bridge abutments, is quite as durable as stone masonry, and is less liable to injury from being undermined. Abutments built of concrete may be made of a mixture of Portland Cement and gravel; or a mixture of cement, sand and broken stone. In either case, the interior may be filled with large rubble stone, the work being carried on in such a manner that a casing of fine concrete will surround the rubble, and fill all voids between the large stones.

The top of an abutment twelve feet in height should be finished with fine concrete, and for bridges up to 75 feet span, should have a top width of about three feet. The back of the abutment should be carried down with a batter of one-inch to the foot; so that at twelve feet, the width of an

abutment would be four feet. The bridge seat should be adapted to the type of bridge to be erected.

A bottom footing, about twelve inches thick and projecting about eight inches should form a base for the abutment. Care should always be taken to commence the abutment on a firm, unyielding stratum of earth, but ordinarily this can be secured by excavating about two feet below the bed of the stream.

Wing walls should be built as the situation may require, to protect the bridge and embankment from the flow of water. The top width of a wing should ordinarily be eighteen inches or two feet wide, and carried down with a batter at the back to a footing of the same width as the abutment. By having the batter in this way, the earth rests on the abutments, and rises and settles more readily when acted upon by frost.



A Stone Road Recently Repaired.

SPECIFICATION FOR CONCRETE

Portland cement.

(1) All cement employed in the work must be of a favorably known brand of Portland cement, and approved by the engineer or inspector in charge of the work. It shall be delivered in barrels or equally tight receptacles, and after delivery must be protected from the weather by storing in a tight building or by suitable covering. The packages shall not be laid directly on the ground, but shall be placed on boards raised a few inches from it.

Fine and rubble concrete.

(2) Concrete referred to in this specification shall be known as "fine concrete" and "rubble concrete," the former to consist of a mixture of gravel and cement, or of broken stone, sand and

cement; the latter to consist of fine concrete with large stones imbedded therein. Unless rubble concrete is definitely specified fine concrete shall be used.

Stone, sand and water.

(3) Broken stone used shall be granite, quartzite, fine-grained limestone, or other equally strong and durable stone, care being taken to exclude soft limestone, friable sandstone, and stone affected by the atmosphere. It shall be broken into varying sizes, the largest, unless elsewhere defined, to pass any way through a two and one-half inch ring. Sand used shall be clean, sharp, silicious, and of varying sized grain. The water used shall be clean, and the amount to be used and the consistency of the mortar and concrete shall be subject to the approval of the engineer or inspector, but may vary in different portions of the work. The water shall be added slowly, preferably by sprinkling from the rose of a hose.

Gravel.

(4) Gravel, if used in its natural state in making "fine" concrete, shall be of uniform character and of varying sized grain, such that the smaller particles will fill the voids between the larger, making a dense and compact mass, the largest stones therein to pass any way through a two and one-half inch ring; it shall be clean and free from earthy mould or organic matter. Should there be insufficient fine material to properly fill the voids and make a compact mass, the deficiency shall be corrected by the addition and mixing of such quantity of sand, and in such manner as may be required by the engineer or inspector in charge of the work. Should the gravel to be used contain an excessive amount of sand, loam, large stones, or other objectionable material, it shall be screened through a mesh of proper size. Where the sand and fine stuff is thus removed the resulting mass of pebbles shall be treated as broken stone, and sand shall be mixed therewith in the manner herein described for broken stone concrete. Where large stones only are removed the material shall be treated in the ordinary manner for gravel concrete.

Proportions of gravel, sand, cement, water, or other material.

(5) The proportions, size and quality of materials to be used shall be as more particularly defined by the specifications for the work to be undertaken or as may be subsequently required by the engineer or inspector in charge of the work. Should any variation from the specifications be required in this respect the amount to be added to or deducted from the contract price shall be determined by the engineer in charge. The ingredients for all concrete are to be carefully measured to insure correct proportions.

Fine concrete mixing.

Gravel.

(6) Where gravel is used for fine concrete the concrete shall be mixed on a water-tight box or platform placed close to the work by first spreading evenly a layer of gravel, upon this shall be spread a proportionate quantity of cement, and the two thoroughly intermixed in a dry state. To this sufficient clean water shall be slowly added, and the whole again thoroughly mixed and brought to a proper consistency.

Broken stone.

Where broken stone is used for fine concrete the concrete shall be mixed on a water-tight box or platform placed close to the work by first spreading evenly a layer of sand; upon this shall be evenly spread the proportionate quantity of cement, and the two thoroughly mixed in a dry state. To this water should be added, and the whole thoroughly mixed until a good mortar is formed. The pro-

portionate amount of stone after being dampened shall then be spread evenly over the mortar and thoroughly intermixed therewith.

Cement mortar.

(7) Cement mortar shall be a mixture of sand and cement in the required proportions; the sand and cement to be first mixed in a dry state, then sufficient water added to properly moisten, and the whole again thoroughly intermixed. Where cement mortar is applied to a concrete base it shall be put in place before the latter has set, so that a perfect bond between the two shall be secured, the surface to be floated and trowelled until smooth and even and otherwise marked as required for the work in which it is used.

Rubble concrete.

(8) Within the body of the abutments, piers and wing walls of not less than four foot span, but not nearer than six inches to the surface in any direction, stones not larger than one man can readily lift, may be placed by hand in layers. These stones shall be in "rack and pinion" order, and not less than two inches apart. In hot weather the stones shall be dampened before placing in the concrete; or, if dirty, the stones shall be well flushed to remove the earth, loam or objectionable material. Concrete shall be carefully inserted between the stones thus placed and thoroughly packed and rammed so as to fill all voids. Concrete shall cover each layer of stones to a thickness of half the depth of the stones, when another layer of stones may be placed. A facing of fine concrete is at all times to be kept at least six inches higher than the rubble concrete, and shall be united with the rubble concrete so as to form a continuous and solid mass. This outer rim of concrete shall precede the placing of the rubble work within, and shall be placed around the interior of the casing to a thickness of six inches. It is to be thoroughly pounded so that no cavities shall remain when the outside casing is removed. In no instance is the rubble concrete to extend higher than one foot below the top of the pier, wing wall or abutment, which top of pier, wing wall or abutment shall be finished with fine concrete rich in cement. The rubble stone is not under any circumstances to extend into a coping, arch or floor.

Laying the concrete.

(9) While the work is in progress it shall be so arranged that a steady supply of mixed concrete shall pass from the mixing box to the point where it is to be placed. At any time when the work is interrupted before its completion, or at the end of the day, a wet covering shall be placed over the last layer of concrete; before the work of depositing the concrete is resumed this surface shall be thoroughly flushed with water to remove any foreign material which may have gathered thereon. No concrete shall be laid in wet or freezing weather. When laid in hot weather the concrete shall by means of dampened canvas, wet sand, sawdust, or other approved means, be protected from the direct rays of the sun for at least five days. Any concrete left over at noon or any time until it begins to set, is not to be remixed or used in the work. When moulds are removed, if the external surfaces are not perfectly full and smooth, they shall be made so by trowelling with mortar composed of equal parts of sand and cement, the coating of mortar to be no thicker than is absolutely required to obtain a straight and even surface.

Concrete under water.

(10) Concrete shall preferably be laid under water by means of a coffer-dam from which the water is wholly removed, and any other method adopted must be approved by the engineer. Dumping into the water from a wheel-barrow or other appliance, or

shovelling in, will not be allowed. Special care must be taken in laying the base of a pier or abutment around the head of piles, to provide that the concrete shall be of sufficient strength and durability, by increasing the proportion of cement or otherwise as directed by the engineer or inspector in charge.

Moulds, cofferdams, etc.

(11) The contractor is to make all necessary provision, at his own expense, for constructing moulds or false-work for the abutments, piers, wing walls, arch, flooring or other work included in this contract; also for the construction and maintenance of cofferdams, platforms or pockets, and for pumping and unwatering, as may be necessary, to enable the work to be properly carried out. The abutments and wing walls are to be erected within a substantial and well constructed framework of dressed and well fitted lumber, with vertical posts and braces, the planking to be not less than 1⅜ inch in thickness, closely boarded up against the work. The centring for an arch must be well formed, curved with the exact radius as shown upon the plans. The ribs must not be farther apart than three feet, and the lagging will be two inches thick dressed to the inside surface of the arch. Care shall be taken to make a smooth, regular surface. The concrete shall be perfectly rammed into place so that all surfaces shall be smooth, without cavities, when the casing is removed. The posts are to be sufficiently close together to render the mould practically unyielding when the concrete is being tamped or rammed. No mould is to be removed without the permission of the engineer or commissioner in charge of the work.

CONCRETE ARCH SPECIFICATIONS.

Location.

(1) The concrete arch to be built under these specifications is to be over Creek, opposite lot , concession , of the Township of , the location to be more definitely pointed out on the ground by the engineer or commissioner in charge of the work.

Plans and dimensions.

(2) The arch, with steel reinforcement, shall be built in accordance with the plans hereto attached and forming part of these specifications. Should it be necessary to extend the abutments and wing walls to a greater depth than is provided by the said plans, the bottom width shall be continued with the batter indicated upon the plans, and the base or footing, one foot in thickness, shall extend eight inches around the bottom of the wall. Wing walls shall be constructed at such angle with the abutments, and with such dimensions as shall be given by the engineer or commissioner in charge of the work.

Excavation and footings.

(3) An excavation of at least two feet in depth shall be made below the present bed of the creek, and to the full width of the footings, the bottom to be made perfectly level before beginning to lay the concrete. Should a greater depth be necessary to provide a firm foundation, it shall be made as directed by the engineer or commissioner in charge of the work: all excavated earth to be disposed of as directed by the said engineer or commissioner.

Abutments and wing walls.

(4) The abutments and wing walls shall be constructed of fine and rubble concrete, which is to be in all respects in accordance

with the specifications for concrete hereto attached. Large stones for rubble concrete shall be approved by the engineer or commissioner in charge of the work, otherwise fine concrete only shall be used. Fine concrete of gravel shall be mixed in the proportion of one part of Canadian Portland cement to eight parts of gravel. If broken stone is used, the proportions shall be one of Portland cement, three of sand, and five of broken stone. All concrete when mixed shall be immediately put in place in layers, and shall be pounded and rammed until perfectly and uniformly solid. All materials shall be subject to the approval of the engineer or commissioner in charge of the work.

Arch concrete. (5) The arch from the springing line shall be of fine concrete reinforced with wire netting, expanded metal, steel bars or other approved material. The concrete to be used shall be in all respects in accordance with the specifications for fine concrete hereto attached. Gravel, if used, shall be clean, compact, and of varying size; shall be such as will pass through a one and one-half inch mesh, the concrete to be mixed in the proportion of one of cement to five of gravel. If broken stone is used, the concrete shall be mixed with the proportions one part of cement, two parts of sand, and four parts of broken stone. The stone shall be such as will pass through a one and one-half inch mesh.

Metal reinforcement. (6) The metal reinforcement shall be fully imbedded in the concrete about one inch from the face of the arch; the wire or other metal used to be first laid over the framework in the desired position, a layer of fine concrete to be then spread over the metal. By means of a suitable hook, and while the concrete is plastic, the metal shall be lifted above the concrete, permitting the concrete to drop under and fully around the wire. More concrete shall then be added and the whole firmly tamped and rammed so as to thoroughly compact the bed of concrete, to the depths shown upon the plans.

Gravel or broken stone surface. (7) The roadway of the bridge shall be surfaced with a coating of gravel or broken stone eight inches in thickness in the centre and six inches at the side, and the approaches to the bridge shall be uniformly and evenly graded, earth being carefully packed behind the abutments and wing walls.

Tenders. (8) Tenders are to state a specific sum for erecting the bridge and supplying all material in connection therewith (including the abutments, flooring, metal, grading, falsework, etc.), but shall also state a price per cubic yard of concrete, and for any depth of excavation which may be required, additional to that shown upon the plans.

SPECIFICATIONS FOR STEEL CONCRETE BRIDGE.—IMBEDDED I-BEAMS.

Location. (1) The steel-concrete bridge to be built under these specifications is to be over Creek, opposite lot , concession , of the Township of , the location to be more definitely pointed out on the ground by the engineer or commissioner in charge of the work.

Plans and dimensions. (2) The bridge, with steel reinforcement shall be built in accordance with the plans hereto attached and forming part of these

specifications. Should it be necessary to extend the abutments and wing walls to a greater depth than is provided by the said plans, the bottom width shall be continued with the batter indicated upon the plans, and the base or footing, one foot in thickness, shall extend eight inches around the bottom of the wall. Wing walls shall be constructed at such angle with the abutments and with such dimensions as shall be given by the engineer or commissioner in charge of the work.

Excavation and footings.

(3) An excavation of at least two feet in depth shall be made below the present bed of the creek, and to the full width of the footings, the bottom to be made perfectly level before beginning to lay the concrete. Should a greater depth be necessary to provide a firm foundation, it shall be made as directed by the engineer or commissioner in charge of the work; all excavated earth to be disposed of as directed by the said engineer or commissioner.

Abutments and wing walls.

(4) The abutments and wing walls shall be constructed of fine and rubble concrete, which is to be in all respects in accordance with the specifications for concrete hereto attached. Large stones for rubble concrete shall be approved by the engineer or commissioner in charge of the work, otherwise fine concrete only shall be used. Fine concrete of gravel shall be mixed in the proportion of one part of Canadian Portland cement to eight parts of gravel. If broken stone is used, the proportions shall be one of Portland cement, three of sand, and five of broken stone. All concrete when mixed shall be immediately put in place in layers, and shall be pounded and rammed until perfectly and uniformly solid. All materials shall be subject to the approval of the engineer or commissioner in charge of the work.

Flooring of concrete.

(5) The floor shall be of fine concrete reinforced with steel I-beams. The concrete to be used shall be in all respects in accordance with the specifications for concrete hereto attached. Gravel, if used, shall be clean, compact, and of varying size, shall be such as will pass through a one and and one-half inch mesh, the concrete to be mixed in the proportion of one of cement to five of gravel. If broken stone is used, the concrete shall be mixed with the proportions of one part of cement, two parts of sand, and four parts of broken stone. The stone shall be such as will pass through a one and one-half inch mesh.

Steel beams.

(6) The I-beams to be used shall be of wrought steel made by the open hearth process, and shall be of the number, form, weight, and spacing indicated upon the said plans, and of a quality approved by the engineer. The steel beams shall be fully imbedded in concrete to a minimum thickness of one inch at any point.

Gravel or broken stone surface.

(7) The roadway of the bridge shall be surfaced with a coating of gravel or broken stone at least ten inches in thickness in the centre and eight inches at the side, and the approaches to the bridge shall be uniformly and evenly graded, earth being carefully packed behind the abutments and wing walls.

Tenders.

(8) Tenders are to state a specific sum for the erection of the bridge and the supplying of all material in connection therewith (including the abutments, flooring, steelwork, grading, etc.), but shall also state a price per cubic yard of concrete, and for any depth of excavation which may be required additional to that shown upon the plans.

SPECIFICATION FOR CONCRETE ABUTMENTS.

Location.

(1) The concrete abutments and wing walls built under these specifications are to be for a bridge over the River, opposite lot , concession , of the Township of , the location to be more definitely pointed out on the ground by the engineer or commissioner in charge of the work.

Plans and dimensions.

(2) The abutments and wing walls shall be built in accordance with the plans hereto attached and forming part of these specifications. Should it be necessary to extend them to a greater depth than is provided by the plans, the bottom widths shall be continued with a minimum batter as indicated upon the said plan. The base or footings shall extend to the required widths around the bottom of the wall. Wing walls shall be constructed at such angle with the abutments and with such dimensions as shall be given by the engineer or commissioner in charge of the work.

Excavation and footings.

(3) An excavation of the depth indicated upon the plans shall be made below the present bed of the stream and to the full width of the footings, the bottom to be made perfectly level before beginning to lay the concrete. Should a greater depth be necessary to provide a firm foundation, it shall be made as directed by the engineer or commissioner in charge of the work: all excavated earth to be disposed of as directed by the said engineer or commissioner.

Concrete.

(4) The abutments and wing walls shall be constructed of fine and rubble concrete, which is to be in all respects in accordance with the specifications for concrete hereto attached. Large stones for rubble concrete shall be approved by the engineer or commissioner in charge of the work, otherwise fine concrete only shall be used. Fine concrete of gravel shall be mixed in the proportion of one part of Canadian Portland cement to seven parts of gravel. If broken stone is used, the proportions shall be one of Portland cement, three of sand, and five of broken stone. All concrete when mixed shall be immediately put in place in layers, and shall be pounded and rammed until perfectly and uniformly solid. All materials shall be subject to the approval of the engineer or commissioner in charge of the work.

Roadway and approaches.

(5) The roadway and approaches on each side shall be filled and graded to the top of the abutments, all earth to be consolidated in layers and neatly levelled as directed by the engineer or commissioner in charge of the work.

Tenders.

(6) Tenders are to state a specific sum for the erection of the abutments and the supplying of all material in connection therewith, but shall also state a price per cubic yard of concrete and of excavation that may be required additional to that shown upon the plans.

SPECIFICATIONS FOR CONCRETE BRIDGE FLOOR.

Location.

(1) The bridge floor to be constructed under these specifications is to be upon the bridge over the river ....., opposite lot ....., concession ....., of the Township of ....., and to be more definitely pointed out on the ground by the engineer.

Material. Appliances etc.

(2) All material, labor, appliances, and implements required in carrying out this contract shall be furnished by the contractor, and shall be such as will, in the opinion of the engineer, secure a satis-

factory quality of work; the said work to be completed in accordance with the plans and specifications hereto attached and forming part of these specifications.

Metal Reinforcement.

(3) The metal with which the said concrete floor is to be reinforced, shall be expanded metal, wire netting, or other metal approved by the engineer, and is to be completely surrounded by concrete and otherwise placed within the floor to the satisfaction of the engineer.

Dimensions.

The sidewalk is to be made with a slope of $\frac{1}{4}$ inch to the foot towards the roadway, and the roadway shall be laid with such curve as the engineer may direct, the total thickness of concrete in the sidewalk to be four inches, and in the roadway to be five inches.

Down Pipes.

(5) Down pipes, gratings and other openings or fixtures shall be placed in the walk or roadway wherever required by the engineer, such openings, etc., to be measured continuously as part of the flooring.

Framework and Staging.

(6) All temporary framework or staging shall be provided and erected by the contractor to support the concrete flooring while in process of construction, this framework to be firm and substantial, of suitable lumber, and in all respects approved by the engineer.

Portland Cement.

(7) All cement employed in the work must be of a favorably known brand of Portland cement, and approved by the superintendent in charge of the work. It shall be delivered in barrels or equally tight receptacles, and after delivery must be protected from the weather by storing in a tight building or by suitable covering. The packages shall not be laid directly on the ground, but shall be placed on boards raised a few inches from it.

Proportions of Gravel and Cement.

(8) The concrete shall be composed of gravel and Portland cement, mixed in proportion of one part by measure of cement to five of fine gravel, no stones of which exceed one and one-half inches in diameter. The concrete shall be mixed on a platform placed close to the work by first spreading evenly a layer of gravel. Upon this shall be spread a proportionate quantity of cement, and the two thoroughly intermixed in a dry state. To this sufficient clean water shall be slowly added, and the whole again thoroughly mixed and brought to the consistency of a stiff mortar.

Wearing Surface.

(9) The sidewalk and roadway shall have a wearing surface one and one-half inches in depth of sand and cement, mixed in the proportion of one part by measure of cement to two parts of sand the sand to be clean, sharp, of varying sized grain and free from loam, earth or other impurities. The sand and cement shall be first mixed in a dry state, then sufficient water shall be added to properly moisten, and the whole shall again be thoroughly intermixed. This top coating shall be applied to the concrete base before the latter has set, so that a perfect bond between the two shall be secured. The surface shall be floated and trowelled until smooth and even, and shall be finished with a toothed roller, or as directed by the engineer.

Work not to be Discontinued.

(10) While the work is in progress, it shall be so arranged that a steady supply of mixed concrete shall pass from the mixing box to the point where it is to be placed. At any time when the work is interrupted before its completion, or at the end of the day, a wet covering shall be placed over the last layer of concrete, and before the work of depositing the concrete is resumed, this surface shall

be thoroughly flushed with water to remove any foreign material which may have gathered thereon. No concrete shall be laid in wet or freezing weather.

SPECIFICATION FOR STONE ABUTMENT.

Plans and Location.

(1) The abutment to be built under these specifications shall be for a bridge over the River ....., opposite lot .... Concession ....., in the Township of ....., the location to be more particularly defined on the ground by the engineer. The wall or abutment shall be built in accordance with the plans or drawings hereto attached, and forming part of these specifications. all material, labor and appliances therefor to be furnished by the contractor.

Footings.

(2) An excavation of at least two feet in depth shall be made below the present bed of the creek, and to the full width of the footings, the bottom to be made perfectly level before beginning to lay the masonry. Should a greater depth be necessary to provide a secure foundation, it shall be made as directed by the engineer in charge of the work.

Masonry.

(3) The wall or abutment shall be built of stone laid in regular horizontal courses, having parallel beds and vertical joints, decreasing in thickness regularly from the bottom to the top, every course to rise at least seven inches. The stone shall be in sizes as large as can be conveniently handled. The beds and sides of the stone must be cut, before being placed in the work, so as to make close joints. Every stone must be laid on its natural bed, and all stones must have their beds well dressed, parallel, and true to the proper line, and always made as large as the stone will admit; no stone on the river side to have less bed than the face of the course. The vertical joints of the face must be squared not less than six inches in from the face. At least one-third of the wall shall consist of headers extending entirely through the wall, and every header shall be immediately over a stretcher of the under-lying course. The stones of each course shall be arranged so as to form a proper bond with the underlying course.

Backing.

(4) Backing shall be carried up with the facework, and in courses of the same depth; the rear of the backing to be lined to a fair surface and flush-pointed; the stones of the backing to be good sized, well-shaped, laid so as to break joints and leave no spaces over six inches wide, which spaces will be filled with small stones and spalls set in cement mortar.

Mortar.

(5) The masonry shall be laid with cement mortar consisting of one volume of Canadian Portland cement and two volumes of clean sharp sand; the cement and sand to be thoroughly dry, then water added to bring it to the required consistency and the whole again intermixed; no mortar which has commenced to set to be used in the work. After completion the whole of the face joints are to be pointed with mortar made of Portland cement and sand as hereinbefore described, but the proportions to be one of cement to one of sand.

Coping, etc.

(6) The coping or bridge seat shall be formed of large flat stones not less than three, nor more than six feet long, at least twelve inches in depth, and the full width of the wall, projecting

three inches over the face, the joints to butt the entire width, and to be thoroughly flushed. A mud-wall shall be built on top of the bridge seat at the end of the girders, of long stones, to the height of the bridge covering. Weep-holes shall be left across the wall one and one-half feet below the bridge seat, two inches wide, and at twelve foot centres. Provision is to be made for any street drains, gas, water or other pipes or fixtures through or adjacent to the wall.

(7) All mortar used in the wall shall be allowed to set twenty four hours before filling is commenced, the earth to be then thoroughly rammed in six-inch layers. Earth Filling.

SNOW ROADS.

Snow roads are a matter of varying significance in different portions of Ontario. The most southerly of the townships of the Province, those along Lake Erie, have not, as a rule, sufficient snow to provide for good winter traffic, and with them, short periods of good sleighing are alternated with slush or bare roads. Proceedingly northerly, the tendency to heavy and continued snow-fall increases, and throughout the greater portion of the Province, the difficulty of keeping snow roads open in winter is felt. Snow-fall, and snow drifts, however, are not wholly a matter of latitude, and vary in different localities, and from year to year.

The roads most subject to obstruction are those running in a northerly and southerly direction, this being at an angle with the direction of the prevailing winds which are from the west and north-west. While all roads are more or less liable to obstruction, those running east and west are not so frequently blocked by snow drifts.

Snow drifts occur in an open country, where the snow is swept from a large area, and deposited at sheltered points, or where the current of the wind is broken. Drifting is practically unknown in a timbered country, and roads protected by woodland are never blocked. The severe drifting of roads is one of the results of the indiscriminate manner in which many parts of the Province have been stripped of the original forest.

There are two methods of preventing snow drifts on roads. One is to interpose an obstacle, neither through nor over which the wind can carry the snow. This method is commonly adopted by railways at deep cuts where board fences are built about eight feet in height. By this means, the snow is deposited, and the drift occurs, on the side of the fence away from the railway. Without such an obstruction the wind-swept snow would subside into the cut, where it would be sheltered from the wind. A similar purpose can be secured by planting a close hedge of cedar, spruce or other suitable evergreen, parallel to the road. This is an effective means of preventing the roads from becoming blocked.

The other method of preventing drifts is to remove all obstacles, so that there is no hinderance to the sweeping snow. A rail or open board fence permits the snow to pass through and over it, but the force of the wind being checked by the fence, the snow subsides in the roadway. If instead of rail and board fences, wire fences are used along the highway, there is no obstruction to the wind, and the snow is swept along with little more occasion to drift than in the centre of an open field.

The objection has been made to the latter method of preventing drifts, that the snow is caught in the sleigh tracks, which are continually being

packed down by traffic. Where this goes on for some time the centre is gradually raised above the sides of the roads until it reaches an inconvenient height for sleighs to turn out and pass one another. This is overcome, however, by making new tracks along each side when the height of the first track indicates the necessity. Or the hardened top of the road can be loosened with a disk harrow, and thrown out with a snow-plow or flattened out with a roller.

To cut out drifts and make passable roads that have been banked with snow is a matter of considerable expense. Numerous townships report that, in doing this winter work last year, nearly all their statute labor was exhausted. In some cases, however, residents understand the necessity of good summer roads, realize that roads both in winter and summer are for their own benefit, and do the necessary work on snow roads free of charge.

Snow plows of considerable merit are manufactured, and can be used to advantage. The objection is made to them that, the track as cut out, very quickly drifts full of snow—yet the same is true of roads shovelled out by hand. Plows have the advantage that they do the work much more cheaply than can hand labor. Rollers have been used to press down the snow. Some townships report the use of road graders placed on a sleigh, in opening their snow roads. And, as previously pointed out, a disk harrow is recommended by some, in cutting down roads which have gradually raised through the the filling of the sleigh tracks.

Prevention, however, is undoubtedly better than cure. The township of Sarawak, the County of Wellington, and others, follows the policy of railways in building high, close-board fences at cuts and other points where drifts occur. But the more universal cure is the wire fence. With rare exception, they are regarded as wholly beneficial in removing the main difficulty. Many townships grant a bonus for the erection of wire fences. It is considered that the bonus is a matter of economy, as the wire fences do away with the cost of shovelling out the drifts, while the injury to the roads in spring is very much lessened. On the other hand, in some localities, it is urged that property owners will not re-build their old fences until wholly decayed, and that they will then use wire as it is the most suitable, in fact, the only material available.

The damage to macadam and gravel roads from snow drifts is very often considerable. When the road is drifted the surface becomes irregular, causing a series of embankments and pitch-holes. This large quantity of snow remains on the road late in the spring, thawing off gradually. The shallow places melt first, leaving the road in patches or pockets, unprotected by snow. The melting of the snow from the remaining drifts keeps these places soft and saturated, and a few days of traffic under these conditions, breaks up the surface badly, making a series of holes corresponding to the pitch-holes of the snow. Roads broken up in this way are, in the few weeks of spring, injured more than during all the rest of the year. Where wire fences are used, or drifts otherwise prevented, the snow is of a uniform depth and leaves uniformly and more quickly, making a better road in winter and permitting much less injury to the road while the snow is disappearing in the spring.

The following schedule shows the townships granting a bonus, and the amount given:

Township.	County.	Bonus.
Adelaide	Middlesex	10 to 17c. per rod.
Adjala	Simcoe	20c. per rod where council considers it an advantage to roads in saving snow-drifts.
Alfred	Prescott	$1 per acre, on side roads only.
Alice	Renfrew	Some small places wire has been purchased by the council.
Ancaster	Wentworth	20c. per rod.
Arthur	Wellington	20c. per rod.
Augusta	Grenville	15c. per rod.
Barton	Wentworth	25c. where it can be shown that snow frequently blocks road.
Bentinck	Grey	12½c. per rod.
Bexley	Victoria	15c. per rod last year, but this year not given. The council will make arrangements with owners when roads drift and give 15c. or more.
Blandford	Oxford	10 to 25c. per rod.
Blenheim	Oxford	15 to 25c. per rod.
Brock	Ontario	25c. per rod.
Bromley	Renfrew	10c. per rod.
Brooke	Lambton	10 to 15c. per rod.
Bruce	Bruce	15c. per rod.
Caledon	Peel	25c. per rod.
Calvin	Nipissing District	6 feet of road allowance.
Carden	Victoria	15c. per rod.
Carlow	Hastings	10 feet of west and north side of road.
Cartwright	Durham	15c. per rod.
Cavan	Durham	20 to 35c. per rod.
Charlottenburg	Glengarry	9c. per rod.
Clarke	Durham	10, 12 and 15c. per rod.
Colborne	Huron	15 to 25c. per rod where snow drifts badly.
Collingwood	Grey	Township pays for wire.
Cramahe	Northumberland	25c. per rod where necessary.
Darlington	Durham	15c. per rod.
Delaware	Middlesex	10c. per rod.
Douro	Peterboro	One-half of cost paid by township.
Drummond	Lanark	25c. per rod.
Dumfries North	Waterloo	15c. per rod.
Easthope North	Perth	15c. per rod on either side where considered necessary.
Easthope South	Perth	10 to 25c. per rod, according to location.
Eastnor	Bruce	7, 10 and 12c. per rod.
Edwardsburg	Grenville	10c. per rod.
Elizabethtown	Leeds	12½c. per rod.
Elmsley South	Leeds	15c. per rod on certain defined roads.
Emily	Victoria	20c. per rod.
Eramosa	Wellington	$1 a chain at places appointed by council.
Fenelon	Victoria	15 to 35c. according to need and amount of travel, etc.
Finch	Stormont	Township pays for wire.
Flamboro West	Wentworth	20c. per rod for fences along roads liable to snow-drifts.
Flos	Simcoe	10c. per rod.
Fredericksburgh North	Lennox	10c. per rod.
Fredericksburgh South	Lennox	10c. per rod.
Garafraxa West	Wellington	25c. per rod.
Georgina	York	15c. per rod.
Gloucester	Carleton	10c. per rod.
Gower North	Carleton	10c. per rod since 1896.
Gower South	Grenville	10c. per rod.
Grey	Huron	10c. per rod.
Grimsby North	Lincoln	12½c. per rod.

Township.	County.	Bonus.
Guelph	Wellington	20c. per rod.
Gwillimbury North	York	15c. on roads approved by council.
Hastings County		County pays 35c.
Hawkesbury West	Prescott	25c. per rod.
Holland	Grey	20c. per rod where liable to drift.
Horton	Renfrew	$1 a rod.
Howick	Huron	25c. per rod.
Huntingdon	Hastings	35c. per rod.
Innisfil	Simcoe	15c. per rod.
Keppel	Grey	10c. on roads 4 rods wide. 20c. on roads 3 rods wide.
King	York	8c. per rod.
Kinloss	Bruce	30 per cent. where it is considered a benefit.
Lanark	Lanark	25c. per rod.
Lancaster	Glengarry	12½c. per rod.
Leeds and Lansdowne Front	Leeds	12½c. per rod.
Longueuil	Prescott	$1 per acre of wire fence.
Luther East	Dufferin	30c. per rod .
Luther West	Wellington	15c. per rod.
McNab	Renfrew	15c. per rod.
Manvers	Durham	15 to 25c. per rod according to locality.
Mariposa	Victoria	20c. per rod.
Maryborough	Wellington	20c. per rod.
Matilda	Dundas	12c. per rod.
Minto	Wellington	25c. per rod.
Monaghan South	Northumberland	20c. per rod.
Mono	Dufferin	30c. where approved by council.
Mornington	Perth	One day statute labor for every ten rods.
Mountain	Dundas	15c. per rod.
Niagara	Lincoln	One-third of cost.
Ops	Victoria	As high as 35c. per rod.
Orillia	Simcoe	25c. per rod.
Osnabruck	Stormont	20c. per rod on roads running north and south and on north side of headlines.
Otonabee	Peterboro'	25c. per rod on west side of roads subject to drifts.
Oxford East	Oxford	10c. per rod on north and south roads.
Oxford (Rideau)	Grenville	10c. per rod.
Pakenham	Lanark	10c. per rod.
Percy	Northumberland	25c. per rod.
Pickering	Ontario	25c. per rod on extensively travelled roads and 15c. per rod on all other roads.
Pilkington	Wellington	75c. per chain.
Pittsburgh	Frontenac	12½c. per rod.
Plympton	Lambton	5 to 10c. per rod.
Proton	Lambton	20c. per rod on locations approved by the council.
Ramsay	Lanark	20c. per rod.
Reach	Ontario	25c. per rod for wire fences built on north and west sides of road where snow usually drifts.
Ross	Renfrew	The council offers to provide half the wire when fences cause snow to block road.
Sarawak	Grey	20c. per rod on drifting parts only.
Saugeen	Bruce	10 and 15c. per rod.
Scugog	Ontario	25c. per rod.
Somerville	Victoria	35c. per rod.
Sydenham	Grey	One-third total cost.
Tay	Simcoe	15c. per rod.
Tecumseh	Simcoe	8c. per rod.
Thorah	Ontario	20c. per rod on lines running north and south, and 15c. per rod on lines running east and west.

Township.	County.	Bonus.
Tiny	Simcoe	37½c. per rod.
Uxbridge	Ontario	20c. per rod.
Verulam	Victoria	35c. per rod.
Vespra	Simcoe	10c per rod.
Wallace	Perth	One-half cost of wire.
Waterloo	Waterloo	20c. per rod.
Westminster	Middlesex	10c. per rod on west side of roads.
Whitby	Ontario	25c. per rod on concessions and main roads.
Whitby East	Ontario	25c. per rod.
Wilmot	Waterloo	12½c. per rod.
Winchester	Dundas	10c. per rod.
Woolwich	Waterloo	25c. per rod.
Yonge and Escott Rear	Leeds	20c. per rod.
Zorra East	Oxford	10c. per rod on west and north sides of road.

WIDTH BETWEEN SLEIGH RUNNERS.

At the last session of the Legislature (1905) an Act was passed respecting the width between sleigh runners. The standard width between sleigh runners has been 3 feet, 4 inches, but sleighs have been in use as narrow as 2 feet, 6 inches. The use of narrow sleighs produces a narrow track. The result has been that in localities where the snowfall is heavy a track is gradually built up too narrow for two ordinary horses to travel abreast. When the snow is deep the horses from time to time break off the road, plunging and crowding one another continually to regain or keep the road.

The abuse of horses from this cause has been very great. In addition to the exhaustion and excitement from teaming under such conditions, increased too often by the merciless lash in the hands of the teamster, bad cuts, bruises and broken legs have resulted, and animals have been frequently maimed and injured for life.

The remedy is a wider track for the horses to walk in, made by placing the runners of sleighs at least four feet apart. The improvement is one which every teamster should appreciate for his own comfort in using the roads. The measure as passed affects only sleighs to be constructed, but could profitably be amended to require an increased width on old sleighs, the cost of which would be very trifling in comparison with the benefit derived.

Sleigh runners to be not less than four feet apart.

(1) On and after the coming into force of this section no person shall use on any public highway except within the limits of any city, any sleigh or other vehicle upon runners drawn by horses or other animals (except cutters) manufactured after the 1st day of December, 1906, unless the same is so constructed that the distance between the outer edges of such runners at the bottom is not less than four feet.

Commencement of Act.

(2) This section shall be given effect to notwithstanding any by-law or by-laws that may have been passed by the council of any county under paragraph number 6 of section 559 of *The Consolidated Municipal Act* 1903 provided that the council of any county may pass a by-law exempting such county from the operation of this Act.

Penalty. Rev. Stat., c. 90.

(3) Any person guilty of violating the provisions of this section, shall, upon conviction for every such violation, be liable to a penalty of not more than $10 nor less than $5, to be recoverable with costs under the provisions of *The Ontario Summary Convictions Act*.

3 Edw. VII c. 19 s. 559 par. 6 repealed.

(4) Paragraph number 6, of section 559 of *The Consolidated Municipal Act*, 1903, is repealed.

DEFINITE PLAN FOR FUTURE IMPROVEMENT.

The first requirement in taking steps towards the successful improvement of the roads of a township is "system." Definite plans should be laid down and these faithfully carried out. Lack of method, lack of system, is the greatest existing draw-back to the economical and permanent improvement of roads. Expenditures are too apt to be made independent of one another and without thought of future work and requirements. It is expected that by a generous amount of "repairs" each year the roads of the municipality will gradually improve. The work is irregular, scattered, no record is kept of it. It is too apt to be done to favor voters who have the greatest influence, or who make the loudest demands, irrespective of the true rights of the individual taxpayer and the benefit accruing to the general public.

A municipal council, as a part of systematic road improvement, should lay down a scheme of annual work that will bring all the roads to fixed standards within a limited term of years, including as far as possible, the erection of culverts and bridges. Such a plan need not at once be worked out in all details, although this is desirable as far as possible. It is to be expected that unforeseen circumstances will arise to hasten or delay the work. It may take two or three years under such a plan to determine how rapidly it can be carried out. It may not be practicable in certain cases to frame a suitable plan in one year or two, but, in any event, every municipal council should at once bring the matter up for discussion, and proceed with it as far as possible in a practical manner. Delay, procrastination, turning aside for trifling obstacles, are the enemies of progress in every particular.

One of the first needs of a township council in framing a comprehensive line of systematic road improvement is a plan of the township, showing all roads. It will at once become apparent from such a plan that certain roads need a stronger road-bed than others; that the improvement of certain routes of travel will benefit the greatest number of people; that certain connecting links are needed to perfect the local road system.

With such a plan of the township before them, reports should be obtained from all road overseers as to the condition of the sections of road under their charge. These reports should show the length and location of each road or section of road in charge of the overseer reporting. They should show the exact condition of the road, the extent gravelled or metalled with broken stone; the extent graded but not metalled; the number and size of culverts and bridges, their condition and material of which they are built.

With a proper township map and such annual reports to guide them, councillors will be in a position to at least tentatively form a plan to assist them and their successors in adopting and following out plans and methods that will, in a systematic manner, provide for the general improvement of the roads.

In carrying out such plans provision should in the first place be made for certain works of permanent improvement in different parts of the township. At the same time certain other more scattered repairs and improvements should be made to provide for traffic and the rightful expectations of every citizen. On the other hand councils must, in fulfilling the public trust reposed in them, be very guarded in dealing with those importunate citizens who cannot consider any roads except those in front of their own farms; whose one idea of the advantages of a bridge or culvert is that they shall be given the job of repairing it.

WIDE TIRES.

Narrow wagon tires are the great destroyers of good roads. The injury done by these increases as the wagon gets older and the wheel wobbles loosely on the axle. A narrow tire on an old and heavily loaded wagon can do more damage to a road in one trip to market and back than would pay for a new wagon. Wide tires, on the other hand, are a benefit rather than an injury to the road. They have a greater bearing and do not cut into the road. Instead of two inches of road surface supporting the load, wagon and all, by doubling the width of tire the load is distributed over twice the amount of road surface. In making wagons, consideration should be given not merely to the strength of the wagon and its wheels, but also to the strength of the roads to be travelled and the kind of wagon they have strength to support.

Tests have been made from time to time of the effect of wide tires, not merely on the roads, but also on the pull required to move the loads. Among these tests have been those made by the British Association for the Advance-

ment of Science in 1902, by the experimental station of Missouri University in 1897, and, more recently, by the U. S. War Department. The results in all cases have been practically the same.

(1) With regard to the roads it is found that wide tires leave a road in better condition than before passing over it.

(2) As to tractive effort the only practical disadvantage of wide tires arises where the road is so soft that the wheels sink into it and the mud sticks to the rims and packs between the spokes. On very hard, smooth roads, or roads covered with dust, wide tires require a very slightly increased tractive effort. On all other classes of road the advantage is in favor of the wide tire.

The practical application of the result of tests is that for traffic on country roads, if wide tires of four inches and upwards are generally used, there would be a decided improvement in every class of road. The tractive power required would be less and the cost of keeping the roads in repair would be

much reduced. If all farm wagons were equipped with wide tires, the muddiest and stickiest of our roads would be very much improved, and many of what are now known as bad roads would be, for the most of the year, in fair condition. While the majority of wagons continue to have narrow tires, the few having wide tires are heavier to draw on very muddy and sticky clay roads; but on the great majority of roads, the average country roads, the advantage is in favor of the tire four inches wide and upwards.

It is urged against wide tires that they do not roll freely in the ruts made by narrow tires. So long as narrow tires are commonly used this will be the case to some extent; but, on the other hand, if wide tires were generally used, the ruts would not exist. In any case, with narrow tires the bottom of the ruts made by the narrow tires are uneven, and the narrow rims are constantly grinding against the sides of the ruts, creating the greatest friction, so that the objectionable difference is not so great as it appears on first sight, if it exists at all.

It is further contended that the wide tires come in contact with more loose stones than do those with a narrow tread. The greater resistance offered in this way is more than counterbalanced, however, by the loose stones dropping into the narrow ruts. In the one case the wheel goes to the stone, in the other the stone gets in front of the wheel. The irregular bottom of the ruts and the stones in the narrow ruts keep up a constant vibration of the wagon, which transmits a swinging motion to the tongue, galling and annoying the horses and destructive to conveyances.

Unfortunately, it has been found a difficult matter to enforce the use of wide tires for several reasons. A wide tire law would necessarily specify certain widths of tire for certain loads or for certain sizes of wagon axle. But in doing so it is difficult to adopt a schedule that can be readily followed. A law can scarcely be framed that would be applicable to all sections of the Province. Municipal by-laws operate unsatisfactorily with regard to traffic from adjoining municipalities.

In the State of Michigan municipalities may allow a rebate of statute labor to those using wide-tired wagons. Such a permissive measure, rather than one that is compulsory, has evident advantages. In the meantime, it is to be trusted that public opinion in Ontario may be aroused, and that the use of wide tires will become popular because of their manifest advantage to all concerned.

ACT FOR THE IMPROVEMENT OF PUBLIC HIGHWAYS.

The Act for the Improvement of Public Highways, passed in 1901 (1 Edward VII., Chapter 32), and as subsequently amended, is as follows:

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

$1,000,000 appropriated for road improvements.

1. The sum of $1,000,000 is hereby set apart to be paid out of the Consolidated Revenue Fund of the Province to aid in the improvement of public highways, subject to the terms and conditions hereinafter set forth.

Townships to report acceptance or rejection of by-law.

2. (1) The highways to be improved in any county may, before the 1st day of January, 1907, be designated by by-law of the county council, and a copy of such by-law shall be transmitted forthwith

to the clerks of the townships of such county. (2 Edward VII., Chapter 12, Section 27; 3 Edward VII., Chapter 27, Section 1; 4 Edward VII., Chapter 10, Section 66; 5 Edward VII., Chapter 27, Section 5).

By-law designating highways to be improved.

(2) The municipal councils of the townships shall within three months of the receipt of such notice from the clerk of the county council take into consideration the highways so designated in said by-law and shall report their acceptance or rejection of the same to the clerk of the county council.

Arbitration where one-third of the township are adverse.

(3) On the receipt of such reports by the clerk of the county council from the clerks of the township councils in the county, if it should appear that one-third of the township councils are adverse to the highways designated by the county council as county highways, then the roads within such townships as reported adversely, which are to form part of the county highway system of such township, shall be determined by arbitration as provided in the Municipal Act.

Rev. Stat., c. 223.

Submitting question to ratepayers.

(4) Where it appears that more than one-third of the township councils disapprove of the system of highways designated in the by-law submitted by the county council, the county council shall then submit to the ratepayers of the county qualified to vote on money by-laws the question, "Are you in favor of a county road system?" If a majority of the votes cast is in favor of a county road system, the roads to be designated and assumed within any township, the council of which disapproved of the roads designated by the county council, shall be determined by arbitration as provided in the Municipal Act.

Submitting by-law for improving roads.

3. Before the final passing of a by-law by a county council designating and assuming roads as provided in sub-sections (1), (2) and (3) of the preceding section, the county council may submit the same for the approval of a majority of the ratepayers of the county qualified to vote on money by-laws.

4. Repealed. 5 Edward VII., Chapter 27, Section 3.

Application of grant to purchase of toll roads.

5. Any municipality may apply the whole or part of the moneys to which it may be entitled under this Act towards paying any expenses that may be incurred for the purchase of toll roads within such municipality, or for freeing the same from tolls. Such toll roads as are purchased shall be included in the roads to be designated and assumed or improved in accordance with the provisions of this Act.

Regulation and inspection.

6. Any highway, in order to come under the provisions of this Act as to aid, shall be constructed or repaired according to the regulations of the Public Works Department with respect to highways.

Amount of aid which may be granted.

6a. The Lieutenant-Governor in Council may by Order-in-Council direct the payment to any county corporation out of the fund set apart under this Act, a sum equal to one-third of the amount expended by the county upon such roads as have been designated by the by-law approved of by the Lieutenant-Governor in Council, as provided by Section 4 of the Act passed in the 3rd year

of His Majesty's reign, chaptered 26. (5 Edward VII., Chapter 27, Section 1).

7. Repealed. (3 Edward VII., Chapter 26, Section 3).

Grant of one-third of cost of improvement.

8. On the completion of any work or road improvement under this Act the council of the municipality under which such work was carried on shall submit to the Public Works Department a statement setting forth the cost of such work, such statement to be certified by a competent engineer, who shall further certify that the regulations of the Public Works Department have been complied with, and on the receipt of said statement by the Provincial Treasurer, certified and approved by the proper officers of the Public Works Department, the municipality shall be entitled to receive out of the moneys hereby set apart for public highways an amount equal to one-third of the cost of the work, but not to exceed the proportion of the appropriation to which such municipality is entitled.

Issuing debentures for expenditure on highways.

9. The municipal council of any township or county taking advantage of this Act may raise by debentures, payable in thirty years, as provided by the Municipal Act, such sums of money as may be necessary to meet any expenditure on highways under this Act, but in no case shall the debentures issued under this Act exceed two per cent. of the equalized assessment of the county. (2 Edward VII., Chapter 12, Section 27).

Statute labour application of, upon roads aided.

10. The council of any township may by by-law direct that the statute labor for which lands fronting on roads in such township constructed or repaired under this section may from year to year be liable may be commuted, and the amounts so received may be paid over to the county and applied in repairing such roads and in removing snow therefrom and keeping the same open during the winter months. (5 Edward VII., Chapter 27, Section 2).

Amount of colonization road grant to be deducted.

11. In the case of any township receiving grants from the consolidated revenues of the Province for colonization roads, the amount of such colonization grants shall be deducted from any sum of money to which such township is entitled under this Act.

Grants made before passing of Act to be deducted.

12. Where any township has been in receipt of grants for colonization roads out of the consolidated revenue fund for the five years previous to the date of this Act, the assessed area of such township shall be deducted from the area of the county in which such township is situated in determining the sum to which the county is entitled under this Act.

Amending Act of 1903.

The amending Act of 1903 (3 Edward VII., Chapter 26) makes certain changes in the original Act affecting Section 2, ss. 1; Section 2 and Section 7, as above shown, and contains the following additional clauses.

By-law for county road system to be approved by Lieutenant Governor in Council.

4. No county shall be entitled to receive any portion of the sum set apart by the Act for the Improvement of Public Highways passed in the first year of His Majesty's reign as aforesaid, unless and until the by-law designating public highways within the county

as a county system of highways has been approved of by the Lieutenant-Governor in Council.

Annual county grant for roads to townships not immediately interested in county system.

5. Where it appears that the highways designated as county roads established under this Act do not pass through one or more of the townships in the county, or where it appears that such highways pass through but a small portion of any township, the county council may by by-law make a grant of a specific amount or an annual sum or both for the permanent improvement of highways in such township or townships as an equivalent for the amount which such township or townships may contribute for the establishment of a county system of highways.

Aid to county where road system established prior to 1 Edw. VII. c. 32.

6. Where at the time of the passing of the said Act the municipal council of any county had by by-law established a system of county roads equal in every respect to the requirements of the Public Works Department, such system of county roads shall be deemed to be within the meaning and intent of the said Act without any submission thereof to the ratepayers or to the township councils, as provided in sections 3 and 4 of the said Act, but nothing in this section contained shall be deemed as preventing the county council from granting an equivalent to any township not benefited by the said county road system, as provided by section 5 of this Act.

County grant to roads in villages and towns.

7. The county council of any county may make a grant by by-law to any incorporated village or town in the county not separated from the county for the purpose of improving certain highways to be designate in such by-law in such village or town, but such highways shall not form a part of the county system of highways.

Intersection of other highways by county roads.

8. Wherever a county road intersects a highway which is not a county road, the continuation of the county road to its full width across the road so intersected, including the bridges and culverts thereon or touching thereon, shall be a part of the county road system.

County Council not liable for sidewalks on county roads.

9. A county council shall not be liable for the building, maintenance or repair of sidewalks on any county road or portion thereof.

Counties to have powers as to snow fences. Rev. Stat., c. 240.

10. The county council shall in respect to county roads have all the powers given to townships, cities, towns, and incorporated villages under the Act respecting Snow Fences.

Act to be read with 1 Edw. VII. c. 32.

11. This Act shall be read and construed in conjunction with said Chapter 32 of the Acts passed in the 1st year of His Majesty's reign.

Amending Act of 1905.

The amending Act of 1905 (5 Edward VII., Chapter 27) makes certain alterations in the original Act as above revised (Section 2, ss. 1; Section 4; and Section 10, and contains the following additional clause:

Roads constructed under Act for Improvement of Public Highways to be county roads.

4. All roads constructed or repaired under the said Act for the Improvement of Public Highways and for the construction or repair of which aid may hereafter be granted out of the fund set apart under the said Act shall thereafter be deemed to be county roads and shall be maintained and kept in repair by the corporation of the county in which such roads are situate.

STREET IMPROVEMENTS.

Town streets, village streets, city streets, and county roads, are in their improvement all subject to the same general principles, but in matters of detail and type of construction there are distinctions which at once suggest themselves, based very largely on the amount and nature of traffic, class of street, and the expenditure that can be made on them. Every street is, in certain respects, a problem in itself, and no general formula can be applied to all, except at a disadvantage.

In general, streets naturally divide themselves into two classes—business streets and residential streets—but, for closer consideration in regard to pavements and street design, the following subdivision will usually apply:

(1) Business streets.
(2) Residential streets which are also main thoroughfares.
(3) Residential streets on which there is little travel.
(4) Streets of little importance either for residence or traffic.

The first of these, streets in the business section, require special treatment as to width of road, kind and strength of pavement to accommodate frequent and heavy traffic, horses and vehicles standing for a length of time, all occupying considerable space. For business streets an easily cleaned pavement is desirable, extending from sidewalk to sidewalk, the latter be-

Sidewalk outside of Trees and the Roadway Narrowed.

ing immediately in front of the office and shop doors and windows. For business streets in cities and large towns sheet asphalt, asphalt block and vitrified brick are most commonly employed. In the smaller towns and villages a substantial form of broken stone roadway is desirable.

The second class of street, of a residential character, on which there is considerable through travel to the centre of the town, to a railway station, mill or factory, or from the surrounding country, requires a substantial form of roadway, but which need not be so wide as in the business section. A well-built macadam roadway is advisable in the great majority of towns for such a roadway, while cities may select a better class of pavement.

The third class of street may be treated in a similar manner to the previous one, but less strength is required to sustain heavy traffic, and the roadway need not be so wide. Appearance is of more importance than durability. A gravel or broken stone roadway is very serviceable for most towns.

The fourth class of street needs only a light roadway, but, as with every street, neatness and cleanliness should be sought after. If in a town or vil-

lage where the available expendiure is small, such streets should at least be nicely graded, and the sides of the street properly levelled and sodded.

The main distinction in the treatment of business and residential streets is that with the former the pavement, including sidewalk, curbs and roadway, should extend over the entire street allowance. In the case of residence streets a narrow roadway only is required, the sidewalk need not be so wide, a curb may or may not be used, while the remaining space should be sodded, with a row of trees either between the sidewalk and the roadway, or between the sidewalk and the fence.

It was formerly customary to lay plank sidewalks immediately beside the fence. Outside of this a row of trees was planted, outside the trees was an open drain, and,in the centre of the allowance the roadway for vehicles.

The more modern practice is to remove the sidewalk from its old position and place it outside the row of trees; high-board and other disfiguring styles of fences are removed, and the boulevard, where the sidewalk had been, is, in effect, added to the lawn. Walks when outside the trees are more effectively lighted from electric arc lamps suspended in the centre of the street, and the public are farther from the citizen's portico or verandah.

The narrowing of the roadway between the curbs reduces the cost of construction and maintenance, and widths of from 18 to 25 feet are found quite sufficient to accommodate traffic on the majority of residence streets, even in large cities. The narrow roadways give vehicles ample room to pass one another, while, to turn, it is always convenient for them to go to a street intersection, where there is sufficient space.

Macadam Streets.

A standard roadway for towns and villages for all streets and for residence streets in cities, is a well-built, well-kept macadam. A macadam driveway is in keeping with well-kept boulevards, lawns and shade trees—the characteristics of a residential street. It has a cool appearance, the dust can readily be kept down by sprinkling, and, for light driving, it is the favorite among horsemen. Bicyclists usually favor macadam in preference to the more costly classes of pavement. A comparison of macadam with asphalt or vitrified brick, in point of utility and appearance, will not result unfavorably to the former for use on residential streets. It is not to be inferred, however, that broken stone roadways are always suitable for streets in the immediate business section, where a harder, and, in a sense, a cleaner, surface is desirable.

By proper attention to repairs the life of this class of pavement can be made continuous. The surface can be frequently rolled, improving it greatly. It should be scraped and swept as are other pavements. When it begins to lose shape the surface can be loosened up by means of teeth attached to the roller, a light coating of new metal applied, and then rolled down as well as when new. It is by such means as these that broken stone roadways can be made much more economical and satisfactory than any other for streets generally. This ease of renewal and repair is a property peculiar to macadam, which renders it most satisfactory for general purposes. While the cost in the first instance may nearly equal that of cedar block, yet at the termination of the period when cedar block is decayed and has to be torn up or renewed, the macadam, if properly treated, is still in good condition. It forms a permanent basis, and its perpetuation is merely a matter of repair, to be met by the general funds.

Sheet Asphalt.

Possibly the most desirable paving material now in use is sheet asphalt. The appearance is exceedingly good and, if properly laid, it is very durable. It consists in the main of a concrete base from 4 to 8 inches in thickness, over which is laid a two-inch layer of asphaltic mixture; that is, a composition of sand or stone dust and asphalt, thoroughly intermixed, in about the proportion of 90 per cent. sand and 10 per cent. of asphalt. Asphalt is a material somewhat similar to common tar. One of its chief sources is the Island of Trinidad, where it occurs in a lake-like expanse. It is also found in the Island of Cuba and elsewhere. This crude asphalt is refined, mixed with sand and stone dust, is heated, and a thin coating spread on the road over a concrete base. Rock asphalt is obtained by grinding to powder bituminous lime-stones and sand-stones, found in a number of the southern states. This powder is heated and applied to the roadway in a manner similar to the Trinidad mixture. The asphalt forms a tough, rubber-like bond, cementing the sand and stone-dust together.

While employed in all large cities, the obstacle to sheet asphalt in the smaller towns and cities is that it is difficult to lay and to keep in repair, requiring skilled workmen and an expensive plant.

Asphalt Block.

Asphalt blocks were first used in San Francisco in 1869, and have since been very largely used in a number of United States cities, particularly Washington, Baltimore, New York and Detroit. In Ontario they have been used in Windsor, where they were laid on a broken stone foundation, and are proving very satisfactory. They are also being used in Sarnia, Stratford, Chatham and other places.

The block ordinarily used is 5 inches wide, 12 inches long and 3 inches deep. A block 4 inches deep can be obtained if desired. The materials composing the block are combined in a heated state by mechanical mixers, and, passing into a machine similar to that used in pressing bricks, are then moulded under heavy pressure. The composition of the blocks is about as follows:

Asphaltic cement	8 to 12 per cent.
Stone dust	8 to 10 per cent.
Fine crushed granite	84 to 78 per cent.

An asphalt block pavement should be laid with a concrete base from 4 to 6 inches in thickness: the concrete to be of about seven of gravel to one of Portland cement. On this should be spread a one-half inch coating of Portland cement mortar (mixed in the proportion of one of cement to three of sand) in which to imbed the block. The block when laid should be grouted with neat cement.

While not so noiseless as sheet asphalt, asphalt blocks are not so noisy as vitrified brick. The advantages claimed for this pavement over sheet asphalt are:

(1) That it is less slippery and affords a much better foothold to horses.

(2) That it can be used on steeper grades.

(3) That it can be used in small cities where there is no asphalt plant.

(4) That it can be laid and prepared without special appliances or skilled labor, and

(5) That it is more durable than sheet asphalt, does not crack in the same manner, and requires less repair.

Vitrified Brick.

Vitrified bricks are different in composition and manufacture from the ordinary building brick. They are made from clay or shale, or a mixture of of the two, which is heated to the point of vitrification and then slowly and gradually cooled. The size of each brick is usually about $2\frac{1}{2}$x4x$8\frac{1}{2}$ inches or 3 x 4 x 9 inches. The durability is not equal to that of asphalt or stone blocks, but they are less noisy than stone blocks. They are manufactured in Toronto, in the States of Ohio, New York and Pennsylvania, and elsewhere. There is room for much variation in the quality of brick. The process of manufacture is one which requires an expensive plant and much skill in burning. In laying a vitrified brick pavement, the natural earth is first prepared by draining, grading, and rolling with a steam roller. On this a layer of concrete or broken stone is laid, from four to six inches in thickness. On this is spread a layer of sand about one inch in thickness, and in this the bricks are imbedded. They are laid on edge, in courses, at right angles to the street line, and with broken joints, the joints being cemented or "grouted."

Curbing and Gutters.

A curb is a line of plank, flag stone, or concrete placed along the edge of the metalled roadway. It is essential on a business street to finish and protect the sidewalk, but may be omitted on residential streets and park roads. Curbs are now largely made of concrete, and are frequently so formed as to supply a concrete bottom for the gutter as well. A curb defines the roadway, giving the street a more finished appearance, as well as protecting the boulevard from careless drivers and from horses standing or tied at the side of the street. It also forms the gutter and aids in keeping it clean and free from obstruction to the flow of water from the roadway. A curb, or curb and gutter, should be constructed after the street has been excavated, graded and underdrained, preparatory to laying the first course of the roadway or pavement. Rolling can then be more prefectly performed, as the curb keeps the road metal in place, preventing it from being crowded outward by the weight of the roller. Being carefully laid to grade it is used as a line from which to gauge the finished surface of the pavement.

The process of constructing a concrete curb and gutter is first to excavate to sub-grade and lay the foundation of gravel or other material, which is pounded or rammed until firm and compact. Planks are then put in place to form the core of the curb, and the side of the gutter next the roadway. The coarser grade of concrete is then placed and tamped between these planks, ready, after rounding the corners with suitable tools, to apply the surface coat. To do this the inside plank forming the core of the curb is moved outward the required distance, usually one inch, and the cement mortar or finishing coat is then run behind it, in contact with the core, and the remainder of the surface coat is readily applied. Before the surface coat is set, the plank retaining the face of the curb in place is removed, and the whole is shaped with float and trowel. A bristle brush dampened is used last, and, in the hands of an expert, the completed work is given the appearance of natural stone. By means of flat metal plates, which are used as well to keep the planks a proper distance apart, the curb is separated into desired lengths, usually eight feet, the separation providing for expansion in hot weather. The specifications for curb and gutter are usually a part of or modelled from the sidewalk specifications, the requirements for excavation, foundation, composition and mixing being in all respects similar. The cost

will vary with local conditions, cost of cement, etc., but, if laid by a street overseer experienced in laying concrete walks, it would be expected to average thirty cents a lineal foot.

Concrete Sidewalks.

Concrete has, throughout the Province, become the standard material for sidewalks owing to its greater durability and its appearance as contrasted with the increasing price of lumber and the poor quality obtainable. Plank walks are at best short lived, require a great deal of repairing, and, when they begin to wear out, are frequently dangerous. A well-built concrete walk, on the other hand, is practically premanent and does not demand the care that plank walks require.

Without resorting to walks made merely of a bed of gravel or finely crushed stone (laid very much after the manner of the gravel or stone foundation commonly used for concrete walks), it is difficult to find a cheaper walk than concrete. Contracts have this year (1905) been let for concrete walks at 8½ cents per square foot. This is a very low figure, and is very near the actual cost, but under favorable conditions very serviceable walks can be built for that price.

For residential and outlying districts particularly, there has been, in some towns and cities, a tendency to lay concrete walks in a more expensive manner than is necessary. Under favorable conditions, and especially with a dry, sandy sub-soil, light but durable concrete walks can be laid without a gravel or broken stone foundation—merely a 3½-inch concrete base and a 1-inch surface coating of cement-sand mortar. Particular care should be given in laying such a walk to provide the best Portland cement, thoroughly mix the concrete, and to completely divide the walk into blocks so that there will be a clear space at each joint. Even on clay soils, if properly drained, such a construction should be safe; or, in any event, a four-inch gravel or stone foundation should be sufficient. A great deal of the failure of concrete walks, commonly attributed to a weak foundation, is really due to expansion and contraction, carelessness in mixing the concrete, inferior cement, and other causes. Crushed granite in the wearing surface is needlessly expensive, except for certain walks in the larger cities, subjected to exceptionally heavy traffic.

These walks are variously called "artificial stone," "granolithic," "cement," "concrete," "cement-concrete." The term "granolithic" is properly applied to the walks of this class in which granite chips are mixed with sand and cement in forming the wearing surface. Although of similar appearance, concrete walks are not the same material as is used for asphalt roadways, with which they are very commonly confused, the asphalt pavement being a mixture of sand and mineral pitch. Asphalt is occasionally, as in the City of Kingston, used for sidewalks. Vitrified paving brick are also used to some extent for sidewalks, costing about the same as concrete, while they are commonly used for crossings, being laid on a concrete base, and taking the place of the concrete wearing surface.

The usual requirements of a concrete walk are:

(1) A foundation layer of stone, gravel, cinders, or other suitable material, consolidated to a depth of from four to twelve inches in thickness, according to the nature of the sub-soil.

(2) A concrete base from three to four inches in thickness.

(3) A surface coating of cement-mortar one inch in thickness, mixed in proportion of one of cement and two of sand.

The foundation layer is intended to provide a certain amount of drainage, as well as strength, and should be greater on a clay soil, retentive of moisture and subject to upheaval by frost, than it need be on a loose gravel or sand.

A concrete base three inches in thickness is ordinarily required on a favorable soil, and four inches where the sub-soil is of clay, or where, for other reasons, the drainage is not thought sufficient.

Where broken stone is used in the concrete base, safe proportions would be one part of Portland cement, two and one-half or three of sand, and five of broken stone. This quantity of sand and cement will make a strong mortar, and there will be sufficient to surround each stone and fill the voids.

Where gravel is used to form the concrete base, the usual proportions are one part of cement to six or seven of gravel. The gravel used in mixing concrete should be free from clay, loam, or earthy material, and should contain about thirty per cent. sand. As there is apt to be some uncertainty as to the quality of the gravel and the uniformity with which sand is intermixed with it, a greater proportion of cement is required than with a carefully adjusted mixture of cement, sand and broken stone.

Roadway Narrowed and Boulevard added to the Lawns.

The sand used in mixing broken stone concrete should be clean, sharp, and of varying sized grain. One of the objects to be aimed at in mixing concrete is to have fine and coarse materials in such proportion to one another that the percentage of voids in the consolidated mass will be reduced to a minimum.

For the surface coat the proportion of one of cement to two of sand is customary, except at street crossings, where one part of cement to one and one-half of sand is commonly employed.

As previously pointed out, special care should be taken to thoroughly mix the concrete, and to divide the blocks completely at each joint—this division providing for contraction and expansion. A four-inch slab of well-made cement-concrete is exceedingly strong, and should not crack or disintegrate when laid on the surface of any soil; but if the soil is wet, the walk would have a tendency to become uneven.

Tar Macadam.

Tar macadam roadways have been very commonly used in England for a considerable period, and tar has been used not only for roads but for gravel sidewalks as well. Even plank walks are frequently coated with tar, the tar

being brushed into the timber with a broom. This is done before the timber is placed in the walk, the coating being applied to all surfaces of the wood as a preservative.

A number of years ago tar was very frequently used in Ontario in making tar-gravel sidewalks. But with the introduction of the water-gas process for manufacturing gas the tar product was found to be unsuitable, and for street purposes that obtained in the coal-gas process is necessary. With the scarcity of coal tar these walks fell into disuse and were neglected, although many of them still remain throughout the Province.

Tar macadam streets are again growing in favor. In Hamilton, where a considerable extent of these roads have been built, pure coal tar is used. In Toronto, London, and other cities, a "bitulithic" macadam has been used. made from a refined tar under a patented process.

The ordinary coal-tar method of constructing a tar-macadam pavement, is, in its first stages, similar to that of making an ordinary broken stone roadway. That is, the street is first excavated and graded to the required width and to a depth of about one foot below the finished grade. Tile underdrains are placed along each side. A concrete curb is placed along each edge of the roadway. On the earth sub-grade is first placed a bed of large-sized broken stone, six inches in depth, which is well consolidated by rolling.

It is at this point that the tarring process begins, as upon the bed of stone last described should be placed the tarred stone in three layers—three, two and one inches in thickness respectively.

The three and two-inch layers should be of broken limestone, such as will pass through a $2\frac{1}{2}$-inch ring. The stone to be tarred should be dry. If moist, it may either be sun-dried or heated on an iron floor under which are flues from a fire, until all moisture is evaporated. The material in its heated state should then be mixed with tar.

Large kettles, holding 100 imperial gallons, should be hung close to the work, and in them the tar kept at a workable temperature. Convenient to the kettles, the stone to be tarred should be placed on mixing boards, similar to those used in concrete work. With a dipper attached to a wooden handle the tar is then applied to the stone, being scattered by a swinging motion of the dipper.

With shovels kept red hot to facilitate the work, the stone should be turned over twice after the first application of tar. More tar should then be scattered over the stone, and again turned over; these operations of tarring and turning over to be repeated until it is seen that each stone has a covering of tar, there being no bare spots on the stone.

As soon as the stone is tarred it should be shovelled into wheel-barrows, placed on the road to the desired depth, and raked to the required cross-section, with a crown of about $\frac{1}{2}$-inch to the foot from the side of the roadway to the centre. The tarred stone should be rolled immediately after being placed on the road, since if left for two or three days it will not consolidate as perfectly.

The finer material composing the third layer may be of stone screenings, screened gravel, or the two mixed. If mixed, they should be in equal proportions, the gravel having been screened through a $\frac{3}{4}$-inch mesh. While the stone composing the coarser layers may be sun-dried, the fine material of the surface layer must be artifiically dried. In Hamilton it is prepared in an asphalt mixer, being brought hot to the road, and carefully raked to the required grade and cross-section. This layer having been thoroughly rolled, dry stone screenings from the crusher should be scattered over the surface to harden it and improve the appearance.

The work should be done during the summer months. All work should be suspended in wet weather, as the materials must be hot and dry. Limestone is considered preferable for tar macadam rather than close-grained varieties, such as granite, the more porous limestone absorbing a portion of the tar, and uniting more firmly in the mass. Pure coal tar should be used, containing not more than 5 per cent. water and not less than 56 per cent. pitch. About eight gallons (more if necessary to coat the stones) should be added to each cubic yard of 2½-inch broken stone. For the fine surface layer, from 17 to 20 gallons per cubic yard of gravel and screenings will be required.

Bitulithic Pavement.

The chief advantages claimed for tar macadam are that it is more durable than ordinary macadam, is less muddy and dusty, and less inclined to rut. It is not found wholly satisfastory on streets where there are car tracks and traffic thereby confined to narrow strips on each side of the track, instead of the wear being distributed more uniformly over the street.

The main differences between the ordinary tar macadam and a bitulithic pavement are that in the latter case a tar specially refined for road purposes is used, and different sizes of stone, from the largest to a powder, are mixed in carefully ascertained proportions, in order to reduce to a minimum the voids in the compacted mass.

The method of laying bitulithic pavement is instanced by Talbot Street, London (Ontario). This street was formerly paved with cedar blocks. The contract required the removal of the old blocks to the city yard and a six-inch excavation. The sub-grade having been rolled, there was laid on it a layer of broken stone, four inches in depth after consolidation. Over this was poured a heavy coating of refined coal tar, so as to fill the interstices of the stone. On this was placed a two-inch wearing surface. The material for the latter was prepared at the contractor's yard. The broken stone used varied in size from such as would pass through a two-inch ring to a powder. The stone was first heated to 250 degrees F. to drive off all moisture, and was then screened into four grades, and the amount of void in each carefully estimated. The stone thus graded, with a quantity of sand, was then intermixed, but in such proportions as to reduce the void to the least possible amount. Refined tar was then mixed with these materials in a mechanical mixer at a temperature of from 200 degrees to 250 degrees F. Thus prepared, the two-inch coating was spread on the street. After thoroughly rolling this layer, a coat of refined tar was spread over it, and on this was spread fine sand, which in turn was thoroughly rolled. It is claimed for this pavement that the amount of void in the surface is reduced to a minimum, that it is waterproof, and the injurious effect of water therefore largely overcome. It is further claimed that the tar is refined in such a way that it will not become too soft in hot weather nor too brittle in cold weather, and that it is therefore more durable and better suited to this climate than is ordinary coal tar.

Tar Roads in France.

Tar is now being used on some of the main country roads of France. It is, of course, used only on the best of broken stone roads—and in France are to be found the finest highways of the world. It is found to be an excellent preventive of dust, while the durability is so increased as to reduce the cost of maintenance by from 25 per cent. to 40 per cent. A road so constructed as to require least repair always renders more satisfactory service than one which is more frequently undergoing repair.

The method of applying the pitch on these roads differs somewhat from that at present in vogue in Canada. It is found preferable to apply the tar to a broken stone road which already has a good surface, or which is being re-surfaced. All dust and dirt is carefully swept from the roadway, and the new application of clean stone is carefully rolled. The hot pitch is then poured (not sprinkled) on the surface, being distributed from the centre of the road, and in such a manner that it penetrates well into the joints. To aid the tar to find its way into the joints it is rubbed energetically with stiff brooms, which open the joints and conduct the pitch. The work is completed by throwing over the surface a little sand or fine dust five hours after the tarring is completed. After a few days' wear the road thus treated becomes united, compact and firm.

The tar is not spread over the surface like a carpet, but the aim is to cause it to penetrate into the roadbed. The work is done during the hottest summer months when the road is thoroughly sun-dried and warm, and all work must cease if the ground is cold or damp, as in that condition it chills the pitch. The best pitch to use is an undistilled coal tar, which boils at about 80 degrees C, and it should be applied to the road at nearly boiling point, as at that temperature it penetrates the road most perfectly. While tar can hardly be considered so suitable for country roads in Ontario as in France, yet the method of application is deserving of consideration in using this material for town streets.

Street Drainage.

The drainage of streets is one of the first matters to which attention should be given, whether it is intended merely to provide a nicely graded earth roadway, or a macadam or other form of permanent pavement. The streets should be given constant grades from point to point, cutting down knolls and levelling depressions, so that the surface water will drain away naturally. While the natural slopes must be the main guide in this matter, yet it is commonly arranged that any change of grade will be made at street intersections.

The surface water should be drained away along the edges of the roadway and given frequent outlets into the sewers or into natural water courses. The sub-soil should be dried by porous field tile drains. The extent of tile drainage required will be controlled by the nature of the soil and the amount of sub-soil water. The general principles and value of drainage are discussed elsewhere in this report in connection with country roads.

Sewers are a valuable aid to proper street construction, affording outlets for drainage, and it is of very much importance that they be laid before streets are paved or macadamized. To construct sewers after the streets are paved means the destruction to a great extent of the street improvement.

Private sewer, water and gas connections, and any underground work needed on the street, should, as far as possible, precede the paving or macadamizing of streets, as the tearing up of roadways in sections is exceedingly destructive.

Machinery for Town Streets.

A proper equipment of machinery and tools is very necessary for the efficient and economical treatment of town streets. The use of machinery, rollers, graders, and stone crushers, has been discussed at length in connection with county roads, much of which is applicable to town streets and need not be repeated.

The most generally useful and necessary implement for macadam street construction is a heavy road roller. A horse roller will be sufficient for the smaller municipalities, but for the larger towns and cities, a steam roller should be purchased.

A roller at once consolidates the broken stone or gravel into a firm, durable crust, such as will support heavy traffic. It is the only means of giving the metalled roadbed a well-shaped, smooth, and properly finished surface, such as will not be rutted and roughened by vehicles.

For economical, durable and serviceable roadmaking a heavy roller is indispensable. A road should be sufficiently smooth and compact to shed the water readily to the side gutters. If the gravel or other road metal is dropped from the wagon loosely on a soft earth foundation, water passes into the sub-soil as through a sieve. Wheels passing over the road when in such a condition at once sink into and rut not only the gravel, but the earth beneath. Water is held in the ruts, and each succeeding vehicle renders their condition worse. The road is less durable, since the gravel, being mixed with the earth from beneath it, contains, when finally consolidated, a dusty, easily-worn surface.

The weight of the roller used must depend upon varying circumstances —the amount of work it will be required to do, the quality of road metal used, the strength of the bridges and culverts over which it must pass. A steam roller costs much more than a horse roller, but does so much better and faster work that it is more economical. A weight of twelve tons does satisfactory work, and it is not too heavy for the majority of bridges. Rolling should commence at the side of the road, approaching the centre gradually. If the roller is first passed over the centre the loose metal is crowded out, and the shape of the road injured. The earth foundation should be rolled, and each succeeding layer up to the top dressing. When the latter is put on, the rolling should be continued in wet weather (or the metal thoroughly soaked from a hydrant or with an ordinary watering cart) until the road is thoroughly compact and solid, able to resist without displacement the heaviest load passing over it.

Horse rollers, weighing five tons (but which may be loaded to eight tons), cost about $90 per ton. Several towns which at first purchased horse rollers, have exchanged them for steam rollers. The steam rollers now owned by municipal corporations in Ontario are shown in the following schedule:

Municipality.	Year purchased.	Weight (tons.)	Cost.
Belleville	1898	15	$3,000
Berlin	1898	15	3,100
Brantford	1901	15	3,200
Brockville	1894	17	4,000
Carleton Place	1901	10	3,000
Chatham	1898	12	3,135
Cornwall	1898	16	3,000
Galt	1896	15	2,700
Guelph	1902	15	3,250
Hamilton	1898	15	3,300
	1900	16	3,250
Ingersoll	1898	12	2,900
Kingston	1884	18	.....

Municipality.	Year purchased.	Weight (tons.)	Cost.
Lindsay	1903	15	$3,250
London	1895	15	3,000
Niagara Falls	1897	12	3,650
Niagara Falls Park Commission	1903	7	2,300
Orillia	1904	15	.....
Ottawa	1885	15	3,000
Owen Sound	1898	15	3,000
Pembroke	1902	15	3,250
Peterborough	1899	15	2,800
Renfrew	1899	15	875
St. Catharines	1897	12	3,600
St. Thomas	1900	12	2,900
Smith's Falls	1900	17	3,100
Stratford	1897	15	3,800
Toronto	1895	15	3,050
	1900	10	2,373
Welland	1903	...	3,000
Windsor	1898	12	2,800
Woodstock	1897	10	3,300

Rock crushers are used for preparing, for street purposes, not only quarried stone, but also field boulders and coarse gravel. By a screen attachment the product is separated into grades for application to the roads in the best possible manner. For city or town work, where a large quantity of material is required, it is a mistake to purchase a small crusher. The breaking of stones is a very severe test on machinery owing to the varying character of the material; and ample capacity, so that the work can be done with perfect ease, is necessary. A crusher which can break ten cubic yards per hour at three-quarters its capacity, is the most serviceable and economical machine for most towns and cities. The extra cost incurred will prove a profitable outlay when the expense of maintenance and operation is considered. Fuller information with regard to crushers with more special reference to their use by townships is contained on pages 75 to 82 of this report.

Grading machines are exceedingly useful on town and village streets. They simplify the work of grading roadways preparatory to placing gravel or broken stone. They are especially valuable in grading and keeping in repair streets which are not macadamized or gravelled. By their use the streets of every village can be nicely graded at little expense, and even earth roadways kept in a presentable condition.

Inspection.

Works carried out under contract should always be carefully supervised by a competent inspector. It is the office of an inspector to see that the work on which he is placed is performed in accordance with the specifications and such verbal instructions as he may receive from the engineer.

Work as it ordinarily comes before the inspector may be classified under (a) the materials used by the contractor, (b) the methods of preparing these materials, and (c) the methods of placing these in the structure. The inspector should qualify himself for his duties in the first place by making himself thoroughly familiar with the specifications, a copy of which he should

always have with him. But more than this, he should have a practical knowledge of materials and should make himself acquainted with the details of the special work under him.

He must be able to form a safe estimate of the quality of materials as they are delivered on the work, in order to reject any that are of an inferior quality or are otherwise unsuitable. Material which he rejects should be plainly marked in such a manner that it cannot be erased, and he should see that it is at once removed from the ground. If allowed to remain there is serious possibility that all or part of the material so rejected will find its way into the work.

In watching the methods of preparing the materials it is necessary to see that the proper quantities are used, that dimensions are as required by the plans and specifications, that machinery and implements used are in proper working order to do good work. It is usual and preferable to allow the contractor to follow his own methods so long as these do not injure the material and the desired results are produced. But where these methods result in defective material or improper workmanship the contractor should be required to adopt methods that will produce results in conformity with the specifications.

In order to properly inspect the manner of construction or of putting the materials in place, the inspector should be conversant with proper methods of the various craftsmen engaged on the work. Men who persistently do careless or inferior work should be removed. The permanent removal of such men should be insisted upon. Special attention should be paid to parts of the work where careless or defective work can be covered up.

The inspector should be constantly on the work so that he may be consulted in regard to any doubtful points that may arise. The inspector should be guided as far as possible by the plans and specifications, but, in case of uncertainty, should at once consult the engineer.

The inspector should arrange his work in such a way that he will cause the least inconvenience to the contractor. Arguments and disputes should be avoided, and to this end, the inspector, before raising any objection, should satisfy himself fully as to his case. When he has done so, his objections and directions in regard to the matter should be given in as few words as possible, and in a spirit of firmness that will leave no room for doubt as to his intentions. At the same time complaints should be made with as little delay as possible, as the longer it is put off the greater the difficulty of rectifying the inferior work.

The position of the inspector is often one of considerable difficulty, and the man who can combine firmness with common sense and tact, who thoroughly understands his position and can maintain it with confidence, is less likely to have inferior work performed under him than is one who is known to be irresolute or who is liable to error.

SPECIFICATION FOR MACADAM ROADWAY.

1. The location and approximate extent of macadam or broken stone roadway, to be laid under these specifications, are as follows: Location and extent of work.

....

....

Excavation and grading of roadway.

2. The space over which the roadway and curb are to be laid shall be excavated to the required depth below the elevation of the finished roadway in accordance with the plans and schedule, on file at the office of the clerk of the town of————— and forming part of these specifications. Perishable or objectionable material shall be removed to a further depth to secure a firm foundation if so required by the engineer. Such excess excavation shall be filled with gravel or other material approved by the engineer, and the bottom of the sub-grade thus obtained shall be then made thoroughly firm and solid by pounding and rolling. For all extra excavation or filling ordered by the engineer the contractor shall be entitled to the sum of 25 cents per cubic yard.

Removal of excavated earth and rubbish.

3. The earth taken from the excavation for the roadway and curb is to be used in properly grading up the boulevards and filling in any portion of the roadbed which is beneath the grade line on the proposed improvement; and the surplus earth is to be teamed from one point of the street to another as may be required in making the said boulevards where there is not sufficient earth, or in raising the elevation of lots adjacent to the street. All earth in excess of that required on the street, or streets, stone, gravel, posts, stumps, other obstacles or rubbish, shall remain the property of the town, to be removed by the contractor to such point or points as the engineer may direct; if not hauled for a distance exceeding one-half mile from the street such removal to be without extra charge.

Levels, stakes and bench marks.

4. The curbing, grading, draining, macadamizing, and all work connected herewith, shall be completed to the lines and levels given by the engineer. No stakes or bench-marks placed for this purpose by the engineer shall be moved or effaced by the contractor without the permission of the engineer so to do.

Tile drainage.

5. The contractor is to furnish the tile and construct a four-inch field tile drain along the inside or road side of the curb line on each side of the street, as shown upon the plan on file at the office of the clerk of the town of —————. The tile are to be placed in an eight-inch trench, the bottom of the trench to be at least eighteen inches below the sub-grade of the roadway; and the tile shall be uniformly and evenly laid with a fall of not less than three inches in one hundred feet, to a proper outlet. Where it is found necessary by the engineer in reaching a suitable outlet to carry the line of tile beyond the street allowance the contractor shall receive the sum of fifty cents for each rod so laid beyond the limits of the street allowance. Tile drains for carrying surface and other water through or under the street or roadway shall be laid as indicated upon the aforesaid plans and profile, or as otherwise directed by the engineer. All tile used shall be of the best quality of clay, manufactured expressly for drain purposes, in lengths not less than one foot, and of uniform diameter throughout. All earth excavated in the laying of these drains shall be returned to the trench, being thoroughly rammed and pounded in layers not exceeding one foot in thickness, and rendered perfectly firm and solid to the satisfaction of the engineer. When sewer pipe is required in place of common tile such pipe shall be furnished to the contractor by the municipality, and shall be laid in all respects to the satisfaction of the engineer.

Concrete curbs.

6. The contractor is to construct upon each side of the roadway, throughout the whole length of the street, a concrete curb, as shown upon the plans hereinbefore mentioned, such curb to be perfectly true to the line and levels given by the engineer. At each street, lane, alley, private way, etc., the curbing shall, unless otherwise directed, be returned to the sidewalk, the returns to be placed at an angle of thirty degrees with the line of the curbing. The earth at the back of the curbing is to be thoroughly rammed so as to ensure stability of the curbing. The material and workmanship used must be in conformity with the specifications and plans for curbing hereto attached, to the satisfaction of the engineer.

Boulevards to be levelled and trees to be served

7. The boulevard between the curb line and the sidewalk is to be regularly levelled off from the grade line at the top of the sidewalk to the curb or roadway as directed by the engineer. The boulevard between the sidewalk and the street limit is to be regularly and evenly graded by cutting down or filling in as may be required, so as to conform to the grade of the sidewalk, except where otherwise directed by the engineer, in order to conform to the elevation of the lawns along the said street. The boulevards are to be left smooth by raking and levelling. The contractor in doing the work must excavate or fill in around trees on the said street in a careful manner so as not to bark or injure the said trees.

Water gullies, manholes, standpipes

8. Returns and offsets, if necessary, must be made in the line of the curb around any of the water gullies on the street. The levelling of the top of the sewer gullies, manholes, etc., and the building up or lowering of all waterworks standpipes in such manner as the engineer may direct to suit the grade and crown of the roadbed will be done by the contractor.

Lane and street intersections.

9. All intersections of private lanes and entrances to private property are to be properly graded and metalled in the boulevard by the contractor at a gradual slope from the line of the street allowance to the bottom of the gutter, and all street intersections are to be graded and macadamized as directed by the engineer, to conform to the finished grade of the street.

Broken stone surface and quality of stone.

10. The surface of the roadway over the said roads is to be covered with crushed stone to the depth of 10 inches in the centre and 6 inches at the curb, to be regularly and perfectly spread over the whole of the roadbed to a depth to conform to the cross section shown on the drawings and proportionate to that specified for the centre and curb. The crushed stone is to be furnished by the contractor and shall be durable limestone, granite or field stone, of such quality and broken to such dimensions as may be approved by the engineer and authorized by the council of the town of ———, All stone used must be free from clay, loam or earthy material. Quarry strippings will not be accepted.

Placing stone on the roadway.

11. The broken stone is to be placed on the roadway in the following manner:

(a) Crushed stone of a size to pass through a two and one-half inch ring is to be placed over the whole of the surface of the subgrade to a depth, after consolidation, of 8½ inches at the centre and 4½ inches at the curb. Upon this shall be spread a coating of fine screenings, to be worked into the interstices of the stone, saturated with water and thoroughly rolled.

(b) Upon this shall be spread a layer of crushed stone such as will pass through a one-inch ring, to be 1½ inches in depth after consolidation, or such further depth as will bring the roadway to the line of the finished grade, this to be coated with screenings, thoroughly saturated and rolled.

Screenings to fill voids.

12. Special care must be taken to work each coating of fine screenings down into the interstices or voids in the mass of stone beneath by thoroughly saturating and flooding with water (and by passing a harrow over the surface of the whole mass if so required by the engineer), until the engineer is satisfied that the interstices are sufficiently filled.

Manner of rolling and wetting roadway.

13. Rolling shall be commenced at the edges or curb of the road, working towards the centre, and shall be continued until the earth sub-grade and each layer in succession is firmly set to the satisfaction of the engineer and ceases to further consolidate under the weight of the roller. The final rolling must be continued until the roadbed is perfectly consolidated and unyielding to the satisfaction of the engineer. During the whole of the rolling herein specified a sprinkling cart is to pass immediately in front of the roller, so that at all times the surface of the road will be saturated with water.

Steam roller provided,

14. A steam road roller will be provided by the town of ——— —, together with a man to operate it, also oil and waste, for which the contractor will pay the said town of ——— the sum of ten dollars for each and every day the roller is in use; the contractor to supply the necessary fuel, water, or other material necessary for its proper operation.

GENERAL CONDITIONS.

Forming Part of all Specifications.

Commencing the work.

1. The work to be done under these specifications shall be commenced on such day and at such place or places as the engineer may direct. Failure so to commence without good and valid reason therefor will be authority for the engineer to declare the contract forfeited. Nor shall the contractor commence work on any street without the order of the engineer so to do.

Forfeiture of contract.

2. The Board of Works reserves the right to declare the contract forfeited at any time it should appear to the engineer that the work or any part thereof is being unnecessarily delayed by the contractor, or that the contractor is wilfully violating any of the conditions of the contract, or is executing the same in bad faith.

Interference with traffic.

3. Care shall be taken at all times not to interfere with business or travel more than is absolutely necessary for the faithful performance of the work. The contractor shall make suitable and adequate provision for the safe and free passage of persons by or over the works, as may in the opinion of the engineer be necessary.

Care of private lawns, etc.

4. At all times during the progress of the work care must be taken not to unnecessarily injure or destroy private lawns, sidewalks, pavements, trees nor boulevards adjacent to the walk.

Removal of surplus material.

5. On the completion of the work all surplus or refuse material must be immediately removed from the street by the contractor.

If not removed within forty-eight hours after notice in writing so to do from the engineer, it shall be removed by the engineer at the contractor's expense.

Liability in case of accident.

6. The contractor shall during the progress of the work use all proper precautions by good and sufficient barriers, red lights, or watchmen, for the prevention of accident, and he will indemnify and save the corporation of the town of ———— from all suits and actions and all costs and damages occasioned by the negligence or carelessness of the contractor, or his agents or employees.

Interpretation of specification.

7. The decision of the engineer shall be final in case of ambiguity of expression of the specifications or doubt as to the correct interpretation thereof.

Disorderly or incompeten employees.

8. Any disorderly or incompetent person or persons who may be employed on the work shall be removed when required by the engineer, and no person so removed shall thereafter be employed upon any portion of the work.

Material and work to be approved by engineer.

9. All materials used in the work, or any portion thereof, included under this contract, shall be subject to the inspection and approval of the engineer. The supply of each and all material or materials must be so gauged that a sufficient quantity will be kept on hand to allow ample time for testing and examination by the engineer without delay to the work of construction.

Removal of condemned work or material.

10. All material rejected by the engineer shall be immediately removed from the site of the work by the contractor. In case the contractor should refuse to remove or replace any rejected work or material within forty-eight hours after written notice, such work or material shall be removed by order of the engineer at the contractor's expense.

Failure to condemn work or material not to imply acceptance.

11. Any defective work or material that may be discovered by the engineer before the final acceptance of the work or before final payment shall be made, shall be removed and replaced by work and material which shall conform to the spirit of the specification; failure or neglect on the part of the engineer to condemn or reject bad or inferior work or materials shall not be construed to imply an acceptance of such work or materials.

Engineer's estimates final and conclusive.

12. It shall be understood and agreed by the parties hereto that due measurements shall be taken during the progress of the work, and the estimates of the engineer shall be final and conclusive evidence of the amount of work performed by the contractor under and by virtue of this agreement and shall be taken as the full measure of compensation to be received by the contractor, but shall not relieve the contractor from full liability under Sections 10 and 11 of this specification.

Payment to be made fortnightly.

13. The contractor is entitled to receive 80 per cent. of the value of any portion of the work performed under these specifications at the end of each fortnight, the amount to which the contractor is so entitled being certified by the engineer. At the expiration of sixty days after the acceptance of the work the whole of the moneys accruing to the contractor, under these specifications shall be paid, excepting such sum or sums of money as may be retained under any of the provisions herein contained, and such sums as may have been paid in the form of partial payments upon the fortnightly estimates of the engineer.

Notices to parties interested.

14. All necessary notices to waterworks, gas, electric light, telephone or telegraph officials, owners or occupants of property, or other interested parties, shall be given by the contractor.

Payment of workmen.

15. The contractor shall punctually pay the workmen who shall be employed on the work comprised in these specifications, in cash current, and not what is denominated as "store" pay. And final payment for the work shall not be made until satisfactory vouchers are furnished the engineer by the contractor showing all wages and accounts for materials and implements used in the work to have been paid.

Unforeseen obstruction, delay or hindrance.

16. All loss arising from unforeseen obstructions or difficulties encountered in the performance of the work under these specifications, or from delay or hindrance from any cause during the prosecution of the same, shall be sustained by the contractor.

Suitable appliances to be used.

17. The contractor is to use such methods and appliances for the performance of all the operations connected with the work embraced under this contract as will secure a satisfactory quality of work and a rate of progress which will secure the completion of the work within the time specified.

Assignment of contract.

18. The work to be performed under this contract, or any part thereof, or any money or orders payable under this contract, shall not be assigned nor sub-let by the contractor, without the presanction of the council of the town of ————. No sub-contract shall under any circumstances relieve the contractor of his liabilities and obligations under this contract. Should any sub-contractor fail to perform the work undertaken by him in a satisfactory manner, and should this provision be violated, the council of the town of ———— may, at their option, end and terminate such contract.

Change in plans and specifications.

19. Should any changes or alterations in these specifications or plans in connection therewith, be, at any time, deemed necessary by the engineer, he shall have authority to make such changes or alterations, and, unless otherwise herein provided for, an amount proportionate to the prices contained in the tender upon which the contract was awarded shall be added to or deducted from the original amount of the contract.

Contractor or his agent to be on work.

20. The contractor or his duly authorized agent or foreman shall at all times while work is in progress be on the ground, and instruction given by the engineer to such agent or foreman shall be of the same effect as if given to the contractor.

Engineer defined.

21. The word engineer, where and whenever used herein, refers to the engineer of the town of ———— or his authorized assistants, or other person appointed by the council of the town of ———— to have charge and oversight of the work.

Contractor defined.

The word contractor, wherever used herein, refers to the party or parties contracting to perform the work to be done under this contract, or the legal representatives or representative of such party or parties.

Tender to be accompanied by certified cheque.

22. Each tender must be accompanied by a certified cheque for the sum of $100 as a guarantee of good faith on the part of the person tendering, all such cheques to be retained in the possession of the town treasurer until the contract and bond for the performance of the work are signed and filed with the engineer.

23. Before the contract shall be signed or the work commenced the contractor shall furnish a bond for the sum of $1,000 for the satisfactory completion of the work, signed by two responsible sureties and approved by the chairman of the Board of Works. Bond for $1,000.

24. The right to reject any or all tenders is reserved by the town of ————, and the lowest or other tender is not necessarily accepted. Right to reject tenders.

25. Tenders for the work under these specifications must be made on the forms for this purpose, which may be had on application to the engineer. Form of tender.

26. Sealed tenders, endorsed ..... will be received by the engineer up to noon, the .....day of ..... next. Receiving tenders.

COUNTY AND TOWNSHIP REPORTS.

The following information respecting the roads of counties and townships is compiled and extracted from reports made by municipal clerks to the Highways Branch, and will afford to municipal councillors and officers, a means of comparison between their own methods and results, and those of other municipalities.

A careful study of these tables and reports will indicate that a radical reform in systems of roadmaking is steadily making itself evident throughout the Province. Numerous townships have commuted and abolished statute labor. A number of counties have established county systems of roads, which they are reconstructing and maintaining in a manner suitable to the requirements of "main" roads. The use of road machinery is vastly on the increase, nearly all townships owning a grader, some two, three and four, while a number own or use rock crushers, and some are beginning to use road rollers. Steel is rapidly taking the place of timber in the construction of bridge superstructures; while concrete has almost displaced timber for small culverts, and is used in short arches and bridges up to 50 feet span.

Township reports show that the better grading and draining of roads is everywhere becoming apparent; that gravel where available is being more systematically and carefully applied; that where gravel is not plentiful there is a constantly increasing use of broken stone, and that in the great majority of townships the road question is receiving more favorable, and better guided attention.

The good roads movement in this Province has not at any time been directed towards the urging of larger expenditures upon the roads; but rather that the money and labor now being expended, should be applied more systematically towards permanent results, and with a better knowledge of the principles of roadmaking. That this result is being attained is evident on every hand, and is most gratifying to those who have aided and encouraged the movement for better roads.

Townships in which Statute Labor is commuted or abolished.

Township.	County.	System as it affects Statute Labor.	Year change was made.	No. of Road Divisions.	No. of Road Commissioners or overseers.	Special Road or Commutation Rate.
Adelaide	Middlesex	Abolished	1904			
Adjala	Simcoe	Wholly commuted	1904	6	6	60c. per day
Ancaster	Wentworth	" "	1898	23	23	50c. "
Armour	Parry Sound	" "	1905			
Assiginac	Manitoulin	" "	1904	3		75c. per day
Atwood	Rainy River	" "	1902	1	1	$1.00 "
Barton	Wentworth	" "	1894	9	9	20c. "
Bastard	Leeds	Four divs. "	1898			50c. "
Bayham	Elgin	Wholly "	1903	5		50c. "
Bedford	Frontenac	" "		62	62	$1.00 "
Bertie	Welland	" "	1901	8	8	$1.00 "
Binbrook	Wentworth	" "	1896	19	19	50c. "
Blanshard	Perth	Abolished	1899	60	60	
Bienheim	Oxford	19 divs. commutted	1898			50c. per day
Brantford	Brant	Wholly commuted				
Burford	Brant	15 " "	1898			50c. "
Carnarvon	Manitoulin	Wholly "	1904	3	3	50c. "
Carlow	Hastings	" "	1901	5	5	60c. "
Cavan	Durham	" "	1902	57	57	75c. "
Charlottenburg	Glengarry	" "	1905			50c. "
Clinton	Lincoln	" "	1898	4	4	40c. "
Cobden	Algoma	" "	1903	1	1	$1.00 "
Colchester, N.	Essex	Abolished	1904	5	5	50c. "

Colchester, S	Essex	"	1904				
Crosby, N	Leeds	Two divs. commuted	1898-1900				60c. per day
Darling	Lanark	Wholly "		24	24	$1.00 "	
Delaware	Middlesex	" "	1903	4	4	50c. "	
Derby	Grey	Abolished	1902	4	4		
Dorchester, S	Elgin	Wholly commuted	1902				
Dover	Kent	" "	1904				50c. per day
Downie	Perth	Abolished	1901-02	5	5		
Dumfries, S	Brant	Wholly commuted	1901	5	5	75c. per day	
Dysart, *et al*	Haliburton	Abolished	1901	30			
Eldon	Victoria	"	1904	4	4		
Enniskillen	Lambton	Five divs. "	1903			$1.00 per day	
Emmosa	Wellington	Wholly "	1902	4	4	50c. "	
Essa	Simcoe	" "	1903	1	1	60c. "	
Etobicoke	York	Partially "				$1.00 "	
Fitzroy	Carleton	Wholly "	1902	2	2	75c. "	
Flamboro, E	Wentworth	" "	1903	4		50c. "	
Flamboro, W	Wentworth	" "	1902	3	3	50c. "	
Fullarton	Perth	Abolished	1901	5	5		
Gloucester	Carleton	Wholly commuted	1901	5	1	35c. per day	
Gordon	Manitoulin	" "				$1.00 "	
Gosfield, S	Essex	Abolished	1902	1	1		
Goulburn	Carleton	Wholly commuted	1901	1	2	60c. per day	
Grimsby, N	Lincoln	" "	1892	2	2	60c. "	
Grimsby, S	Lincoln	" "	1901	3	3	65c. "	
Guelph	Wellington	Abolished	1902	1	1		
Hamilton	Northumberland	Wholly commuted	1903	5	5	10c. per day	
Hawkesbury, E	Prescott	Part commuted	1902	3	3	10c. per day	
Hilton	Algoma	Wholly "	1904				
Huntley	Carleton	" "	1903		2	60c. per day	
Keewatin	Rainy River	" "	1888			$1.00 "	
King	York	" "	1903	10	5	60c. "	
Kingston	Frontenac	" "	1903		1	10c. "	
Kinmount	Bruce	Six div. commuted	1903		1	40c. "	
Kenora	Algoma District	Wholly "	1902			$1.00 "	
Leeds and Lansdowne	Leeds	" "	1901	5	5	$1.00 "	
Logan	Perth	Abolished	1903	5	5		
Louth	Lincoln	Half commuted	1895	1	1	40c. per day	
Malden	Essex	Abolished	1890	1			
March	Carleton	Wholly commuted	1903	1	4	50c. per day	
Markham	York	" "	1904	9	9	75c. "	
Matilda	Dundas	" "		93	93	65c "	
Melvinne	Rainy River District	" "	1898	1	1	$1.00 "	
Meldrum	Parry Sound	" "	1905				
Medora and Wood	Muskoka	" "	1902	10	10	$1.00 "	
Monaghan, N	Peterboro	" "	1896	4	4	75c "	
Monck	Muskoka District	" "	1901	7	7	$1.00 "	
Murray	Northumberland	Two divs. "				50c "	
Neyanwind Lorne	Algoma District	Wholly "		3	3	$1.00 "	
Neebing	Thunder Bay District	" "				$1.00 "	
Nelson	Halton	" "	1900	2	2	40c. "	
Nepean	Carleton	" "	1901	1	1	$1.00 "	
Niagara	Lincoln	Abolished	1903	2	2		
Norwich, N	Oxford	Wholly commuted	1900	55	55	50c. per day	
Norwich, S	Oxford	" "	1901	55	55	50c. "	
Oliver	Thunder Bay District	" "	1902	1	1	$1.00 "	
Orillia	Simcoe	Abolished	1900	6	6		
Osgoode	Carleton	Partially "	1902	5	5	60c. per day	
Otonabee	Peterboro	20 divs. "	1900			75c. "	
Oxford, W	Oxford	Wholly "	1902	1	1	50c. "	

Townships in which Statute Labor is commuted or abolished. *Concluded.*

Township.	County.	System as it affects Statute Labor.	Year change was made.	No. of Road Divisions.	No. of Road Commissioners or overseers.	Special Road or Commutation Rate.
Oxford, E	Oxford	" "	1903	33	33	60c. "
Paipoonge	Thunder Bay District	Never had stat. labor			1	
Pelee Island	Essex	Wholly commuted	1899	4	4	25c. per day
Pelham	Welland	" "	1900	2	2	75c. "
Pickering	Ontario	" "	1900	21	21	75c. "
Pittsburg	Frontenac	" "				
Plummer Add'l	Algoma District	" "	1901	6	6	$1.00 "
Portland	Frontenac	" "	1903	97		40c. "
Puslinch	Wellington	" "	1903	4	4	50c. "
Rama	Ontario	" "	1903	6	6	50c. "
Ratter and Dunnett	Nipissing	" "		24	24	$1.00 "
Rayside	Algoma	" "	1904	4	4	
Reach	Ontario	" "	1903	15	15	60c. per day
Rochester	Essex	" "	1904	4	4	50c. "
Salter and May	Algoma District	" "	1902			50c. "
Saltfleet	Wentworth	" "	1903	3	3	35c. "
Sandwich, E	Essex	" "		5	5	$1.00 "
Sarawak	Grey	" "	1896–1903	4	4	60c. "
Scarboro	York	" "	1903	10	3	75c. "
Schreiber	Thunder Bay District	Partially "	1902			25c. "
Sherborne	Haliburton	Wholly "	1901	1	1	75c. "
Shuniah	Thunder Bay District	Abandoned	1883			
Sidney	Hastings	Wholly commuted	1900	5	1	50c. per day
Stafford	Renfrew	Abolished		3	3	$2\frac{1}{2}$ mills on $100 assessment
Stamford	Welland	Commuted	1896	4	4	50c. per day
St. Joseph	Algoma District	Wholly commuted	1902	2	2	75c. per day
Tarentorus	Algoma	Wholly commuted	1903	4	4	$1.00 "
Tecumseh	Simcoe	Abolished	1903	6	6	
Tehkummah	Manitoulin District	Wholly commuted	1902	2	2	80c. per day
Thorah	Ontario	" "	1902	2	2	50c. "
Thorold	Welland	Nearly all "		73	73	75c. "
Tossorontio	Simcoe	Wholly commuted	1904	5	5	50c. "
Tilbury, E	Kent	" "	1901			65c. "
Tilbury, N	Essex	" "	1898	6	6	50c. "
Toronto Gore	Peel	Abolished	1898	2		
Vaughan	York	Wholly commuted	1903	22	22	75c. "
Walpole	Haldimand	" "	1903	7	7	75c. "
Watt	Muskoka District	" "	1903	7	7	$1.00 "
Westminster	Middlesex	" "	1902	4	4	45c. "
Westmeath	Renfrew	" "	1902	2	2	75c. "
Whitby	Ontario	" "	1900	10	10	60c. "
Whitby, E	Ontario	Partly "		37	37	50c. "
Whitchurch	York	" "	1897			75c. "
Yarmouth	Elgin	Six divs. "			1	
York	York	Wholly commuted	1900	14	14	$1.00 "
Zorra, E	Oxford	" "	1902	101	101	50c. "

ALGOMA DISTRICT.

The district not being organized, all road work is performed by the local municipalities. Gravel is plentiful in some sections and rock, suitable for crushing, in all. It is noticeable that the newer townships show more progress in the matter of commutation than do the townships in certain districts of older Ontario.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.
Balfour	Worked out	27				
Chapleau	" "				Gravel not plentiful	
Drury, Denison & Graham	" "	35			" "	One grading machine
Hallam	" "	25			No gravel	" "
Hilton	Commuted	30	15		Good gravel	One grader rented
Joeclyn	Worked out	14	5		Gravel plentiful	
Johnston	" "	30	8		" "	One grader
Korah	Commuted	50	15		" "	" "
Laird	Worked out	60	5		" "	Grader rented
Macdonald & Meredith	" "	160			" "	One grader
Nairn & Lorne	Commuted	22			" "	" "
Parpoonge	Never used	100			" "	
Plummer, etc.	Commuted	20			Gravel not good and not plentiful	One grader
Prince	Worked out	20			Gravel plentiful	
Rayside	Commuted	10			Gravel not plentiful	One grader
St. Joseph	"	65			" "	" "
Salter, etc.	"	75				
Sault Ste. Marie	Worked out	100				
Tarentorus	Commuted	15	6		Gravel plentiful	
Thessalon	Worked out	13		1	Gravel very poor and nearly all used	One grader and one crusher

HILTON. Statute labor was commuted this year (1904) at $1.00 per day. This of course was a little high, but on the whole was satisfactory. More work was done and better done.

KORAH. The commutation rate has been raised from 75c. to $1.00 per day. There is being a better class of work done on our roads now as to grading and ditching, and the class of gravel used; also keeping same graded up, and keeping ruts filled in.

BRANT.

A system of County roads is proposed. At the present time the County contributes nothing to roads, but maintains about fifteen bridges. Steel and concrete are used in their construction, while the townships are also using these materials. Three townships commute their statute labor wholly. Gravel is fairly plentiful, except in the township of Onondaga, where there is practically none. There are three toll roads in the County, 17 miles in all. It is proposed to purchase these and to include them in the County system.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of concrete culverts over 4 feet span.
Brantford	Commuted	213	12		Good gravel, but plentiful only in parts	Two graders	2	1
Burford	Commuted	215	50		Good gravel	One grader	1	1
Dumfries South	Commuted	120		6	Gravel and limestone	One grader and one road roller		
Oakland	Worked out	30	Nearly all		Good gravel	One grader		2
Onondaga	Worked out	48	None		Very little in Township	One grader	2	

Brantford Township. In sub-division No. 9 statute labor is commuted at 75 cents per day, the work being done under a commissioner. This has given satisfaction, and it has been decided to do away with statute labor throughout the township. The township has one large concrete culvert, and two steel bridges, all giving satisfaction. About $5,000 is spent annually on roads, in addition to statute labor.

Burford Township. Statute labor is being commuted in a few more divisions each year, at 50 cents per day. Steel bridges and concrete culverts are giving excellent satisfaction. One concrete bridge, built by the Counties of Brant and Oxford, is 29 feet in span, with cement floor and railing.

Dumfries South. Statute labor is wholly commuted at 75 cents per day, with five road divsions and five overseers. The township has a grader and a 5-ton horse road roller, bought two years ago.

Oakland. Concrete is very satisfactory. We have one bridge of two span of fifteen feet each, and one of eighteen feet single span. They give no trouble whatever and no prospect of any.

BRUCE.

The County Council makes a grant annually to road construction, amounting to 15 per cent of the County rate of the previous year, which is expended under the supervision of the County Councillors. The County also maintains 133 bridges. Steel and concrete are being used in their construction. Gravel is fairly plentiful in most parts of the County, with outcroppings of rock, particularly in the northern portion. A considerable percentage of the roads are gravelled and road construction is not difficult.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of Concrete Culverts over 4 feet span.
Albemarle	Worked out	125						1
Amabel	" "	142			Broken Stone and Gravel	One Grader		
Arran	" "	126	100		Gravel	"		
Brant	" "	180	120		"	Two Graders	1	
Bruce	" "	170	110		Gravel fairly plentiful	One Grader	Several.	
Carrick	" "	170	100		Gravel plentiful but sandy and loamy	" "		
Culross	" "	130	Nearly all.		Gravel	" "		
Eastnor	" "	101	One-third.		"	" "		
Elderslie	" "	140	75	1	Gravel and broken stone	" "		
Greenock	" "	120	75		Gravel plentiful	Two Graders	2	
Huron	" "	128	76		" "	One Grader		
Kincardine	" "	160	100		" "	" "		
Kinloss	Partially commuted	100	60		" "	Rent a Grader		
Lindsay	Worked out	45	10		" "			
Saugeen	" "	140	100		" "	Rent a Grader	2	

BRANT TOWNSHIP. Many culverts have been put in of concrete tile with good results in every case as far as I know.

BRUCE TOWNSHIP. A number of the newer bridges are steel with concrete abutments which are satisfactory so far. Wire fences are rapidly overcoming the difficulty of keeping snow roads open in winter.

CARRICK. Culverts of cement tiles are giving good satisfaction. We built one bridge with concrete abutments this summer.

CULROSS. The abolition of the statute labor system is being discussed. There is plenty of gravel in the township, but very little of good quality—either too coarse or too much sand. I think that if our coarse gravel could be crushed it would make the very best material for roads. We are just commencing to use concrete tile for culverts in place of timber, which is nearly exhausted. There are a few wide tires in the township. The wide tires are the first thing that will make good roads. The matter of paying a bonus for wire fences has been discussed for a long time, and in a few cases a grant has been made, but it has not been carried out to any great extent.

EASTNOR. Wire fences are the only cure for the blocking of roads in winter.

ELDERSLIE. The roadwork is still going on under an army of 67 pathmasters. The council purchased a road grader last year. A large amount of grading has been done, and this is followed up by the pathmasters putting on gravel; and where there is not sufficient the council pays for gravelling the bad places. We have many concrete culverts which are giving good satisfaction. When I say culverts I mean pipes ranging in size from 8 inches to 18 inches. There was a by-law in force for several years in this township, granting a small bonus per rod for wire fences on roads running north and south; but this by-law was cancelled three years ago. The pathmasters do what they can in keeping the roads open in heavy snow storms by parties doing their statute labor in this way in advance. The council helps too by paying men to plough the roads, occasionally.

KINCARDINE TOWNSHIP. Cement tile culverts are giving good satisfaction. Snow blockades are a great hindrance to public travel and pathmasters are instructed to open the highways when blocked, which is chiefly done by gratis work. Councils have sometimes paid for plowing the roads, out of the general funds of the municipality. Roads are in very fair condition, but much neglected in not keeping them properly graded, much gravel being washed off the road and consequently wasted chiefly on hills and long grades.

KINLOSS. Statute labor is commuted in six divisions at 50 cents per day, there being one commissioner for the commuted district. The townsip hires a grader owned by a contractor. Concrete culverts give satisfaction so far. A bonus of 30 per cent. is given towards the construction of wire fences where it is considered that they will be a benefit.

CARLETON.

Occasional grants are given by the County Council to open new roads, but no roads are maintained exclusively by the County. Twelve bridges are maintained by the County, in which steel and concrete are being used. One concrete bridge floor has been laid. There are five toll road companies, controlling 64 miles of road. A County system has been proposed under the Highway Improvement Act, to include the toll roads, but has not yet been adopted. Seven of the ten townships in the County commute statute labor. Each township has from two to five grading machines, and North Gower uses a roller. Concrete is being generally used for small culverts, and road improvement is making good progress.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of Concrete Culverts over 4 feet span.
Fitzroy	Commuted	170	Scattered		Gravel	Two graders		1
Gloucester	"	200	5		Gravel and broken stone	Five graders		
Goulbourne	"	221	25		Good gravel	One grader		
North Gower	Worked out	88	15	Partial.	Gravel and stone	One road roller and one grader.	1	
Huntley	Commuted	180						
March	"	100			Very little gravel	One grader		
Marlborough	Worked out	168	Scattered	1	Gravel	" "		1
Nepean	Commuted	260			Very little gravel	Three graders	3	
Osgoode	Partially com'uted	140		11	Gravel and stone	Two graders		
Torbolton	Worked out	78						

CARLETON. — *Continued.*

FITZROY. Statute labor is wholly commuted at 75 cents per day, the roads being divided into two divisions with an overseer over each. The council has talked of hauling gravel in winter. Roads are partially gravelled. The graders are used in early summer so that the roads are good in dry weather. The roads are greatly injured by the amount of water conducted on and along them from adjoining lands.

GLOUCESTER. Statute labor is wholly commuted in the township, there being five road divisions and two commissioners. The rate was formerly 50 cents per day, but this has been reduced to 35 cents to accord with a change in the assessment, the new rate thus being about equal to what it was formerly. Concrete pipes up to 30 inches diameter give good satisfaction. The township has five graders, the roads are now graded in good shape for gravel and stone, and steps are being taken to have them metalled.

GOULBOURN. Statute labor is wholly commuted at 60 cents per day, the township being divided into four road divisions with two commissioners for the township. The township has one grader and a 4-ton horse roller, bought in 1902 for $360. The commissioners metal about 6 miles of road each year with gravel.

MARCH. Statute labor is wholly commuted at 50 cents per day, the township being divided into four divisions with a commissioner for each. Wire fences are coming into use, with every satisfaction as to their effect on snow roads.

NEPEAN. The rate of commutation is $1.00 per day. Road divisions are entirely abolished; so are "Overseers of Highways." All work is in charge of one person, known as the "Road Commissioner." Three steel bridges were built in the year 1902 at a cost of something over $14,000. Plans are being prepared for another to be erected this season, at an expected cost of $5,000. We also have two old style iron bridges spanning large gullies. They were built 15 to 20 years ago. They have given satisfaction. Snow roads are a difficulty, of course, but not a very serious one. The toll roads are kept fairly well open by the companies, but as to township roads, people generally turn out of their own accord after a storm and "break them." They sometimes apply to the council for remuneration but rarely get any.

Our commutation money for 1904 was over $3,500, and the whole of it was spent in advance of collection, payment being made from general funds with the help of a little temporary borrowing. Our road commissioner has proved himself capable. Besides the three machines we have a good roadmaking "plant." All the culverts put in in 1904 were concrete, and we have a large stock of pipes prepared for use this year.

OSGOODE. Statute labor is partially commuted at 50 cents per day, with five road divisions and five road overseers. There has been no change in the statute labor so far. The township has constructed some concrete culverts that are giving good satisfaction. A certain amount of commutation money is held back in the commuted district to keep roads clear of snow in winter.

DUFFERIN.

The County maintains seven bridges, and new bridges are being built with steel superstructures, and concrete abutments and floors. Granite is only fairly plentiful. One township, East Luther, uses a rock crusher.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of Concrete Culverts over 4 feet span.
Amaranth	Worked out	175	4		Gravel	Two graders		
Garafraxa East	"	110	25		"			
Luther East	"	60	18	1	Gravel and broken stone	One grader	3	
Melancthon	"	220	All partia'y		Gravel	One grader and one rock crusher		
Mono	"	125	10		"	Two graders		
Mulmur	"	198				"		1

MELANCTHON. We introduced concrete culverts this year. We purchased the moulds and make the tile. So far they give satisfaction. From the middle of February until the middle of April we really have no roads in this township. The Government should not allow rail or log fences over four feet high along any highway in a township, where cattle are not permitted to run at large. Roads are good except winter roads, which are impassable, and have to take to the open fields. A good deal of the statute labor is lost in keeping roads open in winter. The Government should pass a law to abolish statute labor.

MONO. We spend about $2,000 a year on roads and bridges and do about 3,500 days statute labor. We have one stone arch bridge of two arches, each arch about ten feet.

UNITED COUNTIES OF DUNDAS, STORMONT AND GLENGARRY.

A county road system under the Highway Improvement Act is receiving consideration. At present the united counties maintain four bridges, and three others may be assumed. Steel and concrete is used in their re-construction. Gravel is not plentiful, and broken stone is largely used by the townships, which either own crushers, or have it broken by local contractors.

Township.	Statute Labor.	Total Road Mileage.	Miles Graveled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of Concrete Culverts over 4 ft. span.
DUNDAS								
Matilda	Commuted	125	50	25	Gravel and broken stone	One grader		
Mountain	Worked out	125		20	" "	One grader & one rock crusher	2	
Williamsburg	Worked out	177						
Winchester	" "	100	50	50	Gravel and broken stone	One rock crusher	2	
STORMONT								
Cornwall	Worked out	125	40	10	Stone and gravel	One rock crusher		
Finch	" "	120	80	5	" "		6	
Osnabruck	" "	160	160		" "	One grader		
Roxborough	" "	130	100		Gravel		2	
GLENGARRY								
Charlottenburg	Worked out			8	Broken stone & a little gravel	One grader & one stone crusher	6	1
Kenyon	" "	110	25	1	Broken stone and gravel			12
Lancaster	" "	171			" "	Two graders	1	
Lochiel	" "	200			" "			

MATILDA. Statute labor is wholly commuted at 65 cents per day, with 93 road divisions and 93 road overseers. The township had a crusher, but sold it. The owner repaired it and this year we gave him a contract of putting out 125 cords at $5.00 per cord. A great many use four and some six-inch tires. If we all used the six-inch tires we would have fine roads. We have paid about $2,500 in bonuses at 12 cents per rod for wire fences in the last two years. Snow does not trouble us much now as nearly all roads that are liable to drift have wire fences erected along them.

MOUNTAIN. Our gravel is poor with too much soil, and gravel too fine. No gravel roads in the township stand over one or two years' traffic, but stone roads are giving good satisfaction. A by-law was passed, 1904, to compel parties, where roads drift, to remove fences and to allow 15 cents per rod for proper wire fences. There is some talk of commuting statute labor.

CHARLOTTENBURG. The system of building permanent bridges and culverts is extending widely. A vote in favor of commuting statute labor at the rate of 50 cents per day has been carried by a small majority of ratepayers. Winter roads have been greatly improved by building wire fences as a substitute for timber or stone. The good effect is also seen in spring. The drawing of milk to cheese and butter factories on narrow tired wheels causes much injury to clay roads. The disposition to use better methods and implements is growing, and an improvement may be looked for within a short period. Wooden bridges and culverts are being replaced with steel and concrete.

CORNWALL. The council considers it advisable to do away with statute labor and collect the same amount in taxes, but how to expend the money to best advantage has not yet been decided upon.

OSNABRUCK. Commissioners have expended money during the past season instead of pathmasters as formerly, and it seems better. An agitation for commutation is kept up—so far unsuccessfully. We are using concrete altogether for culverts and find it quite satisfactory. For the erection of wire fences a bonus has been granted for the last ten years and has pretty nearly solved the problem of snow drifts.

ELGIN.

The county council as yet does not assist in road construction, but a county system is proposed, to include the one toll road remaining in the county. The county maintains 33 bridges; using steel for superstructures of new bridges and concrete for abutments and floors. A county engineer is employed and is paid by salary. Gravel is fairly plentiful in some townships, very scarce in others, while there is no stone. Concrete culverts are largely used.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of Concrete Culverts over 4 ft. Span.
Aldborough	Worked out	225			Gravel			
Bayham	Commuted	300	40		"	One grader	3	
Dorchester South	"	99						
Dunwich	Worked out	204			Gravel	One grader		2
Malahide	" "	180	50		"	" "	8	1
Southwold	" "	220			"	" "	3	9
Yarmouth	Partly commuted	210	120		Creek and pit gravel	Two graders	6	12

YARMOUTH. Six divisions are now commuted and placed under the supervision of a commissioner. The commutation of all statute labor is proposed.

ESSEX.

At a county road convention, held at Essex, March 10th, 1905, a resolution was adopted authorizing the county council to formulate a plan of county roads under the Highway Improvement Act, giving name of road proposed to be improved, cost, etc., and submit to the local municipalities for their approval. Road construction is difficult in this county owing to the lack of good drainage and scarcity of gravel. The county is building new bridges of steel and concrete, using the latter for abutments and floors. Sixteen bridges are controlled by the county. The county engineer is paid by fees.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of concrete culverts over 4 feet span.
Anderdon	Worked out	55		3	Limestone	Two graders	2	
Colchester, North	Commuted	85	20		Gravel	"	1	
Colchester, South	Abolished	66	30		"	One grader	1	
Gosfield, North	Worked out	80	27		"			1
Gosfield, South	Abolished	50	38		"	Two graders	1	5
Maidstone	Worked out	150	25		"		Several.	
Malden	Abolished	65	25		"	Three graders	1	
Mersea	Worked out	180	50		"	Two graders		2
Pelee Island	Commuted	55	20	2½	Gravel and limestone	"		
Rochester	"	100			Little gravel	One grader	1	
Sandwich, East	"	43	36		"		3	
Sandwich, South	Worked out	69						
Sandwich, West	"	100	Main roads		Gravel	Two graders and 10 small ones		
Tilbury, North	Commuted	60			No Gravel	One grader and common land roller	1	
Tilbury, West	Worked out	40	4		"	One grader	3	

Colchester North. Statute labor is abolished. There are now five road divisions, one under each councillor. Our roads are fair—the gravel roads are good and the mileage of the gravel roads is being steadily increased. On our town lines an extra effort is being made to supplement the council's grants by private subscription, one having been completed in this way, between Gosfield North and Colchester North.

Pelee Island. Statute labor is wholly commuted at 50 cents per day. There are thirteen road divisions, included in four groups of divisions, each of the latter in charge of one commissioner. The council expended about $1,000 building cribs for the protection of the roadway along a portion of the lake front, in order to relieve the ratepayers of a portion of the expense. The commutation for the year 1904 was reduced to 25 cents per day. The roads in general in this township are in excellent condition, since the abolition of statute labor, and the employment of the commutation to perfect a certain piece of road each year. The whole of the roads will soon be in good condition. This plan is far in advance of the old system of doing a piece here and a piece there.

Tilbury North. Statute labor is now abolished and commuted at 50 cents per day. The township is subdivided into four road divisions. We are trying to build the best clay roads in this section of our country, possible only by drainage and having heavy clay on top of the road. I think in our township we will impress on the farmers that they should have good drainage for their roads and have their roads raised about two feet higher than the level of the ground.

FRONTENAC.

The county council of Frontenac maintains a short county road of 4½ miles, and ten county bridges, all in charge of the county engineer, who is paid by salary. Steel and concrete are being used in the county bridges, but only one township Portland, reports the construction of a steel bridge; and another, Pittsburg, the construction of a concrete culvert over 4 feet in width. The small number of grading machines is also very noticeable. Gravel is to be had in places, but granite and limestone rock is abundant, two townships owning crushers, while Portland pays $4.50 to $5.00 per toise for broken limestone. There are six toll roads in the county, aggregating 54 miles in length, which it is proposed to purchase and include in the county system.

Township.	Statute Labor.	Total Road Mileage.	Miles Gravelled.	Miles Stoned.	Road Metal in Township.	Road Machinery.	No. of Steel Bridges.	No. of concrete culverts over 4 feet span.
Barrie	Worked out	30			No gravel			
Bedford	Commuted	189	very few		Gravel plentiful			
Clarendon	Worked out	85	1		Little gravel			
Hinchinbrooke	"	175			No gravel			
Howe Island	"	25						
Kennebec	"	70	very little		Gravel			
Kingston	Commuted	200	all more or less.	No record.	Limestone and gravel	A grader and a crusher		
Loughborough	Worked out	150			Granite and gravel			
Olden	"	115	10		A little gravel			
Oso	"	100			"			
Palmerston, etc	"	100	15		"			
Pittsburg	Commuted	250	50	100	"	A rock crusher		1
Portland	"	200	scattered		"		1	
Storrington	Worked out	65	6	15	"			
Wolfe Island	"	90			Gravel and limestone	One grader		

OLDEN. Where a capable man is in charge of the work, the result has shown the advantage of a commissioner.

PORTLAND. Statute labor is wholly commuted at 40 cents per day, the work and expenditure being made under the direction of the council. There are 97 road divisions and an equal number of pathmasters for the purpose of keeping roads open in winter.

WOLFE ISLAND. In 1903 our council passed a by-law for commuting all statute labor at 50 cents per day, but it was opposed so strongly by the ratepayers, that the council rescinded the by-law and dropped back into the "old rut" without getting properly organized and giving it a fair trial.

GREY.

The County of Grey built a system of county gravel roads some years ago, but as soon as the debentures were paid the roads were handed back to the townships. The county council now does nothing for roads, but maintains a considerable number of bridges in which steel and concrete are being used. A county engineer is occasionally employed for specified work, and is paid by fees. Gravel is plentiful in most parts of the county, but some townships use crushed stone.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.
Artemesia	Worked out	200	25		Gravel	One grader	
Bentinck	"	225			"	" "	
Collingwood	"	175	50	2	Gravel and stone	Two "	
Derby	Abolished	87	87	Short p'ces.	"	One " and one rock crusher	
Egremont	Worked out	170	No record.		Gravel	One grader	
Euphrasia	"	216					
Glenelg	"	200	100		Gravel		2
Holland	"	225	100		"	One grader	
Keppel	"	200	No record.	10	Stone and a little gravel	"	
Normanby	"	240			Gravel plentiful	Two graders	
Osprey	"	150	75		"	One "	
Proton	"	240	No record.		"	One "	
St. Vincent	"	300	20	10	Stone and a little gravel	One " and one rock crusher	3
Sarawak	Commuted	50	50		Gravel	One "	1
Sullivan	Worked out	180	120		"	One " and one wheel scraper	
Sydenham	"	160	50	20	Broken stone & a little gravel	Two " crusher rented	2

COLLINGWOOD (TOWNSHIP). The abolition of statute labor and (say) 75 per cent. of the sum expended under commissioners, is proposed. No bonus is paid for wire fences but the township council when asked usually pays for the wire. The blocking of roads in winter is one of our greatest difficulties. Wire fences appear the only remedy Such fences are rapidly coming into use.

DERBY. Statute labor is abolished, and the township is divided into four road divisions, a councillor acting as overseer for each. The township owns a grader, crusher, and it is proposed to purchase a roller. The council has been building concrete culverts for the last two years with satisfactory results. A petition was presented signed by farmers and others, asking that wagon tires be required to be five inches wide. The mail roads are divided into sections, and permanent section men appointed to keep them open all winter. The councillors are overseers in their respective sections. The council are in favor of adopting up-to-date methods and are succeeding in their efforts.

EGREMONT. Commutation of statute labor is proposed. We gave 20 cents a rod for the construction of wire fences, but last year the by-law was repealed. It did not work satisfactorily with us. The blocking of roads by snow is a very serious matter. I proposed a by-law last winter, but it did not pass. Pathmasters call out the men and open the roads, and allow for it on statute labor. This is objectionable, as there is too much time lost. Special meetings have been held in every school house to awaken an interest and show that the statute labor system is now a relic of the past, but road improvements have not kept pace with other improvements, such as buildings, etc.

HOLLAND. The blocking of roads by snow was last winter a very serious matter. Wire fences are becoming general, owing to bonus. In some places snow fences are erected at cuts. Ratepayers usually open the roads at their own expense. The use of the grader and gravelling has made a great improvement.

KEPPEL. I think that the opinion of the ratepayers has changed very much and commutation is not far off. Commutation and direct control by road commissioner is proposed. The roads are very good for a township with such a large quantity of waste land. We spend about $3,000 per year and about 5,000 days of statute abor, but are very much handicapped by the statute labor system.

SARAWAK. All statute labor is commuted at 60 cents per day, and the township divided into four road divisions with a commissioner for each. We are well satisfied with this system—better pleased than ever before with it. Our roads are generally good and nearly all gravelled with good gravel. Would not go back to statute labor.

SULLIVAN. A by-law giving 25 cents per rod for the construction of wire fences was in force for a number of years, but is now repealed. Keeping snow roads open is the serious difficulty—pathmasters are supposed to have charge, but it is very indifferently done. Where statute labor is faithfully performed, the roads are in a very fair condition—otherwise the reverse. If the Government would grant to each township who would abolish the statute labor system, a small bonus, in proportion to the number of miles opened, I am confident statute labor in a short time would be a thing of the past throughout the older portions of the Province.

SYDENHAM. Commutation is talked about. Some parts of the township are particularly poor in the matter of snow drifts. In winter we find using the disc harrow about as good a way as any for keeping the roads open.

HALDIMAND.

The roads of Haldimand are maintained almost exclusively by the local municipalities. The county maintains five bridges, which, when renewed, are being rebuilt with steel superstructure, concrete abutments and floors. Roadmaking in this County is a matter of considerable difficulty, owing to the lack of gravel. There are a few outcroppings of limestone, and broken stone has been used to a slight extent.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Canborough	Worked out	63	None	None	No gravel	One grader	One	One.
Cayuga, North	"	96	"	"	A little gravel	"	None	None.
Cayuga, South	"	40			Lake gravel	"	"	One.
Dunn	"	40	None	None	Stone or lake gravel	"	"	Four.
Moulton	"	100	"	"	Lake gravel	"	"	None.
Oneida	"	96	10		Some gravel	"	9	"
Rainham	"	70	3		One gravel pit	"	10	Two.
Seneca	"	100	13		No gravel in township	Two graders	None	Four.
Sherbrooke	"	17	8½		Lake gravel	None	"	None.
Walpole	Commuted	200	10	2	Little gravel, some stone	Two graders, one crusher	14	Four.

MOULTON. Statute labor is wasted and shirked—no pretense of doing it in a great many cases, and the people think bad roads are a benefit in that they keep the automobile and kindred horrors out of the way of our horses. Tramps, too, shun the bad roads.

HALIBURTON.

This County is not fully organized, and settlement is not complete, so that comparatively little progress has been made in road-making.

Townships.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in townships.
Anson and Hindon	Worked out	30			
Cardiff	"	75	patches		Stone and a little gravel.
Dysart, etc.	Commuted	300			" "
Glamorgan	Worked out	100		on hills	" "
Lutterworth	"	65	6		" "
Minden	"	120	2		" "
Monmouth	"	60			Very little gravel.
Stanhope, etc.	Commuted	30			Gravel plentiful.
Snowdon	Worked out	105			
Stanhope, etc.	"	100			Gravel plentiful.

HALTON.

A county system of roads is now being considered by the County and township councils, under the Highway Improvement Act. The County maintains 12 bridges, which are being re-built with steel and concrete; the latter for abutments and floors. Gravel is fairly plentiful, with a number of outcroppings of stone suitable for roadmaking.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	Number of steel bridges.
Esquesing	Commuted	235	In patches.		Gravel	3 Graders	10
Nassagaweya	Worked out	125	80		"	1 Grader	
Nelson	Commuted	125	6		"	2 Graders	5
Trafalgar	Worked out	198	5		Lake gravel	4 Graders	35

NELSON. Statute labor is wholly commuted at 50 cents per day. There are two road commissioners and two road divisions. It has been proposed to subdivide the divisions now existing and to appoint other two commissioners. To use four inch tires on clay roads would not be favored, but on stone or gravel roads it would be acceptable.

ESQUESING. There are ten steel bridges in the township. One has been up 30 years, and the others have been built during the past six years. The highest price was $5,000 and the lowest $600. A by-law will be introduced at the next meeting of the council to commute the statute labor, but it is doubtful if it will carry.

HASTINGS.

Hastings has an excellent system of county roads, comprising 472 miles, now being constructed under the Highway Improvement Act. The northern townships of this county are sparsely settled, and nearly all the main roads are kept up by the County. They are under the management of a road superintendent, who engages foremen, men and teams. The County maintains 179 bridges, in which steel and concrete are being largely used for renewals. The County also makes annual grants to the back townships for road purposes. Gravel is plentiful in some places, but rock is abundant. The County uses two rock crushers, a traction engine, grader, etc. Very little machinery is used by the townships, only one, Sydney, using a grader. Tyendinaga built a small steel bridge last year.

Townships.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.
Bangor, etc	Worked out	84			
Carlow (and Mayo)	Commuted	60			Gravel
Dungannon (and Farraday)	Worked out	150			"
Elzevir, etc	" "	72			
Faraday	" "	75			
Hungerford	" "	300	Nearly all.	4	Some gravel
Huntingdon	" "	100	No record.	Very little.	"
Limerick	" "	43	4		"
Madoc	" "	100			"
Marmora and Lake	" "	75	15	3	Stone, but very little gravel.
Mayo	" "	48			Gravel.
Montengle and Herschel	" "	50			Stone, but very little gravel.
Rawdon	" "	150	Nearly all.		Gravel.
Sidney	Commuted	200	" "		"
Thurlow	Worked out	120			"
Tudor and Cashel	" "	100		3	Little gravel.
Tyendinaga	" "	150	50	25	Stone and gravel.
Wollaston	" "	100			No gravel.

HUNGERFORD. We sometimes hear "commutation to money" discussed, but it is never taken hold of as a real live thing, as it should be. We have about 3,600 days on our roll and this commuted at 60 cents per day, coupled with what is already spent by way of grants, would soon put us in the "front row."

HUNTINGDON. The council appoints a road surveyor each year and seventy-five pathmasters, who oversee the work done on their several beats. The road surveyor expends any money granted on roads, bridges or culverts when directed by council. The council pays five cents per cubic yard for all gravel put on roads by pathmasters. This is the means of making our roads much better than before gravel was paid for by council. The people are taking more interest in grading before gravelling, and, as I said, using more gravel Since council pays for it, some road beats through the township are mostly all gravelled. The roads are decidedly improving.

SIDNEY. Statute labor is wholly commuted at 50 cents per day. There are five road divisions and one road commissioner. Township roads under present system are becoming first-class. Commutation is working well and unanimously upheld.

HURON.

The county council of Huron maintains bridges of 20 feet span and over, on all boundary lines. An engineer, paid by salary, supervises all county work. Bridges are about 100 in number, and are being re-built with steel and concrete. The County is remarkable for the fact that not one of the townships has commuted or abolished statute labor. Gravel is, as a rule, plentiful and is fairly well distributed; but broken stone has been used to a slight extent. Concrete is very largely used throughout the County for culverts and small bridges.

Townships.	Statute labor.	Total road mileage.	Miles gravelled	Miles stoned.	Road metal in township.	Road machinery.	No of steel bridges.	No. of concrete culverts over 4 feet span.
Ashfield	Worked out	189						
Colborne	" "	125	50		Gravel	One grader		2
Goderich	" "	156			"	"		1
Grey	" "	180	Nearly all.		"	"	6	
Hay	" "	110	30		"	"	1	1
Howick	" "	145	145		"	"	1	
Hullett	" "	135	Nearly all.	1	"	"	6	2
McKillop	" "	120	"		"		10	
Morris	" "	120	80		"	One grader		
Stanley	" "	112	Nearly all.		"	"	1	2
Stephen	" "	170	140		Very little gravel	"		
Tuckersmith	" "	127						
Turnberry	" "	87	No record.		Gravel	One grader		
Usborne	" "	126						
Wawanosh East	" "	86	No record.	No record.	Stone and gravel	One grader		
Wawanosh West	" "	120	Nearly all.		"	"		4

GREY (TOWNSHIP) Five steel bridges have been built in the township, costing in all $9,000. Five concrete culverts were built in 1904. Less ground is travelled annually by the pathmasters and the nature of the work is more permanent.

HULLETT. We have six steel bridges from 30 to 100 feet span A 90 foot span erected last year, cost for abutments $2,100, and steel top $1,500. Four small steel bridges were built this year; total cost of abutments $963; total cost of steel tops $556; and for cement floors, about $52.00 each more. We have two concrete bridges, each a little over four feet span.

MCKILLOP. A by-law is passed compelling all parties building new fences to build wire fences. The matter of keeping snow roads open is a serious difficulty and the methods employed are plowing and shovelling. If the law was amended compelling each individual to keep snow roads open, a larger number of people would build wire fences.

TURNBERRY. No change has been made in the statute labor system, except in unincorporated villages, where statute labor is commuted. We have a large number of concrete tile culverts and they give good satisfaction. Some years there is considerable difficulty in keeping snow roads open. Pathmasters call out their men and give certificates for work done, to be allowed on following year's statute labor.

KENT.

Grants are given by the county council to local municipalities where expensive work is undertaken. The County maintains six bridges, in which steel, stone and concrete are being used. Roadmaking is especially expensive in Kent owing to the absence of gravel and stone in quantity, the soil being a heavy clay. A few of the town-hips have nothing but clay roads, but good use is made of the grader in keeping them properly crowned and shaped.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Camden	Worked out	120						
Chatham	" "	240						
Dover	Commuted	200	None.	None	No gravel	Two graders.		
Harwich	Worked out	289	No record	"	Gravel	Four graders	12	2
Howard	" "	138						
Orford	" "	130	65		Gravel	Two graders.		3
Raleigh	" "	215	12		Little gravel	" "		1
Romney	" "	80	22		Gravel	" "	1	3
Tilbury East	Commuted	150	5		Lake gravel	" "		1
Zone	Worked	140			Little gravel	One grader		5

RALEIGH. Concrete pipe up to 48 inches is used a great deal

TILBURY EAST. A by-law was passed and came into force last year by which statute labor may be compounded by taking contracts on roads—allowing $1.00 for a day's statute labor. If not so compounded all labor is commuted at 65 cents a day and charged on the roll. Since about 1899 steel bridges have been built of span from 10 to about 50 feet, on stone and concrete abutments. Concrete bridges and culverts give excellent satisfaction, so far as we have gone. We have clay roads which are excellent when good, and undesirable when bad, but are much better than formerly on account of better drainage

LAMBTON.

The county council maintains 24 bridges, which are being re-built with steel superstructure, concrete abutments, and in one instance a concrete floor. An engineer is employed for county bridge purposes, receiving a per diem allowance. There is one toll road in the county, 11 miles in length. Roadmaking is, for the most part, expensive and difficult, owing to the scarcity of gravel in the majority of the townships. Graders are largely used in keeping the clay roads in good condition.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Bosanquet	Worked out	210	Nearly all.		Gravel	One grader	3	
Brooke	" "	185	50		"	Two graders	7	3
Dawn	" "	200			Very little gravel	One grader	3	
Enniskillen	Partly commuted	246						
Euphemia	Worked out	140	5		No gravel	One grader	2	
Moore	" "	200						
Plympton	" "	200	120		Gravel	Two graders	4	
Sarnia	" "	108						
Sombra	" "	224						
Warwick		210	No record		Gravel	One grader		1

BOSANQUET. No bonus for wire fences is granted because the people will not build new fences until the old one is finished with, then they will erect wire fences.

LANARK.

The County of Lanark maintains a system of county roads, under the Highway Improvement Act, to which more extended reference is made elsewhere in this report. Gravel is obtainable in some districts for road construction, while in others dependence must be placed on broken limestone. The county maintains five bridges, of which one is constructed of steel and concrete.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.
Bathurst	Worked out	180					
Beckwith	"	100	60	30	Gravel and stone	One grader	
Burgess, North	"	100	50	6	" "		
Dalhousie, etc.	"	125	75		Good gravel		1
Darling	Commuted	50			"		
Drummond	Worked out	120	No record.	1	"	One crusher	
Elmsley, North	"	60					
Lanark	"	175	No record.		A little gravel		
Lavant	"	50			Very little gravel		
Montague	"	100	1	10	Stone and gravel	One crusher	
Pakenham	"	150	1	¼	" "	One grader	
Ramsay	"	150			" "	"	1
Sherbrooke, south	"	90	Very little.		" "		

DRUMMOND. We are beginning to use broken stone in some places, which is found to be a great improvement. We expect the good roads scheme to make some of our main roads next summer Any that were made last year are very highly spoken of.

LEEDS AND GRENVILLE.

The county council gives occasional grants to the townships, more especially towards bridges. Two bridges are maintained exclusively by the county; and six with other counties. A commencement has been made in the use of steel and concrete. A county engineer, when employed, is paid by fees. There are six toll roads in the county, three owned by companies and three by townships. Gravel is not as a rule plentiful, but stone is abundant, and the townships which do not own crushers contract with local men, and broken stone is being used on the main roads.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
LEEDS—								
Bastard and Burgess	Four divisions commuted	205						
Crosby, North	Commuted	132			Gravel			
Crosby, South	Worked out	111	No record.		Little gravel	One grader		
Elizabethtown	"	225	No record.	No record.	Broken stone and gravel	One grader, six steel scrapers, one rooter plow and one spring tooth leveller		
Elmsley, South	"	66	Not continuous	6	Broken stone and gravel	One grader		
Kitley	"	100	6	30	" "			
Leeds and Lansdowne, Front	"	100	50	50	" "	One grader	7	
Leeds and Lansdowne, Rear	Commuted	85	45	9	Gravel	One crusher	1	
Yonge and Escott, Front	Worked out	165	No record.	No record.	Little gravel	One grader and one crusher		1
Yonge and Escott, Rear		50	No record.	No record.	"	One crusher and two spreading wagons		
GRENVILLE—								
Augusta	Worked out	200	50	50	Broken stone and gravel	One grader		
Edwardsburg	"	200	50		Gravel plentiful	"	1	
Gower, South	"	60			Gravel plentiful in part of township	"		
Oxford (Rideau)	"	177			Gravel plentiful in part of township	"		
Walford	"	115	General repairing		Gravel plentiful in part of township	"		

KITLEY. The township pays for crushing stone in any road beat where the people residing on the beat furnish the help to operate the crusher in the way of hauling stone and putting them into the crusher.

LEEDS AND LANSDOWNE FRONT. We get out stone for the crusher with statute labor, and let the contract for crushing. Wire fences are very effective in preventing the roads from being blocked by snow in winter. The township has seven steel bridges, the longest of 207 feet span, costing $7,000.

LEEDS AND GRENVILLE.—*Continued.*

LEEDS AND LANSDOWNE REAR. Statute labor has been wholly commuted at 75 cents per day. There are five road divisions and five overseers. We have this year changed commutation rate to $1 00 per day, and in some of the largest divisions put in an assistant commissioner. One rock crusher, purchased this year, cost $1,400. capacity about 15 cords per day. We are using cement culvert pipe altogether at present, which is giving good satisfaction. The council is making an effort to get the people to get out stone during the winter season.

AUGUSTA. Our township is spending about $2,000 a year crushing stone and placing on the worst parts of our roads, where no good gravel can be procured. Our roads are fairly good and there is a general desire to put on more metal every year. Our township will certainly commute all statute labor before long—the young generation coming on wants better roads—the old way has had its day.

LENNOX AND ADDINGTON.

Roads and bridges throughout the County are maintained entirely by the township councils, the county council doing nothing in this regard. Gravel is not as a rule plentiful, but broken stone has been largely used, two of the townships, Richmond and Camden East, owning crushers. Camden East also uses a 6-ton road roller.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 ft. span.
Adolphustown	Worked out	26	None	Patched	Broken stone, no gravel in township	One grading machine	None	None
Amherst Island	" "	26	26	26	Broken stone and lake gravel.	One grading machine	None	None
Camden East	" "	250	No record.	No record.	Limestone, granite and gravel.	One 6 ton roller, 1 crusher and 3 spreading wagons.		
Denbigh	" "	160	None thoroughly		Broken stone with gravel in few localities.	None	None	
Ernesttown	" "	250	No record.		Broken stone and gravel.		1	None
Fredericksburg North	" "	70	Over stone All.		Broken stone and hill gravel.		5	
Fredericksburg South	" "	40	8 "		Broken stone and lake gravel.			3
Kaladar	" "	150			Very little and poor gravel.			
Richmond	" "	200	100	100	Broken stone, hill gravel plentiful	One crusher		
Sheffield	" "	185	No record.		Good gravel	None	None	None

CAMDEN EAST. We are using the crusher, and this year (1904) placed on the roads over fifteen miles of crushed stone.

FREDERICKSBURG SOUTH. The township paid a contractor $5.00 per toise in 1904 for broken stone.

KALADAR, ETC. The road problem in this municipality is a very serious one when you take into consideration the number of miles of roads to be maintained, the character of the country, the nature of the material to make roads, and the assessment of the municipality (viz., $10,000). I think that Provincial legislation should abolish statute labor, not leaving it in the hands of councils, who always have their own election to office in view. My experience as township clerk for twenty-five years is that under the old system of performing statute labor, part of the labor is squandered, and a great deal of it not performed at all. A change is certainly desirable.

LINCOLN.

The County of Lincoln maintains a short county system, 36 miles in length, under the Highway Improvement Act. The roadwork is under two superintendents and a committee of the council. The county maintains 28 county bridges, of which one only is steel. Five of the seven townships of the county have adopted progressive methods of road management, statute labor being either commuted or abolished. Gravel is not uniformly distributed and crushed limestone is being used for road metal.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of stone culverts over 4 ft. span.
Caistor	Worked out	100			No gravel in Township		1	
Clinton	Commuted	75						
Gainsboro	Worked out	120			No gravel in Township		1	2
Grantham	" "	90		10	Stone and gravel	One grader		1
Grimsby North	Commuted	40	5	5	Stone and lake gravel	A grader, crusher and roller	4	
Grimsby South	"	60			Very little gravel	One grader	2	
Louth	"	90						
Niagara	Abolished	120	8	12	Stone and gravel	One grader	2	

GRANTHAM. Very little drifting of snow roads is now encountered as the old rail fences are being replaced with wire ones.

GRIMSBY NORTH. Statute labor is wholly commuted. There are two road divisions and a commissioner for each. The rate was last year raised from 50 cents to 60 cents per day. The township has an outfit of road machinery consisting of a grader, rock crusher and a roller.

LOUTH. One-half of the statute labor has been commuted for a number of years past. The moneys received therefrom are applied to the payment of the expenses of operating the two road machines owned by the township. All statute labor in the villages of Jordan, Jordan Station and Vineland is commuted at seventy-five cents per day and the moneys received therefrom are used in the construction of sidewalks. The commutation in other parts of the township is at fifty cents per day. The township is divided into thirty-six road divisions, including the three above named villages, each of which constitutes a road division. There is an overseer for each road division. The commutation has been beneficial as more and better road work can be performed by the road machines than in the old way. The above information relates to the year 1904. At the council meeting held February 6, 1905, all the township, except the three villages, was divided into four road divisions with a commissioner for each, in place of thirty-three divisions as formerly. I think the change will be beneficial. I am in favor of the complete abolition of statute labor.

NIAGARA. Statute labor is abolished. The township is divided into two divisions with a commissioner for each. The roads in this township are poor; there are too many roads as there is a road around every block of 200 acres of land.

MANITOULIN DISTRICT.

Manitoulin has not yet a county organization. The townships are progressive in their methods of road management, four commuting statute labor, and others considering such a step. Gravel is plentiful in some districts, and excellent stone for crushing is also available.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.
Assiginack	Commuted	90	25		Gravel	One grader
Billings	Worked out	60			A little gravel	" "
Burpee	" "	35	10		Gravel	" "
Carnarvon	Commuted	75	2		"	" "
Cockburn Island	Worked out	22	3		"	
Gordon	Commuted	150	10		A little gravel	One grader
Howland	Worked out	75			" "	" "
Sandfield	" "	45	9		" "	
Tehkummah	Commuted	50	No record		Gravel plentiful	One grader

GORDON. We used disc harrows last winter with fairly good success in keeping snow roads open.

TEHKUMMAH. Statute labor is wholly commuted at 80 cents per day. There are two road divisions and two road commissioners. Each division is divided into two parts and a councillor is appointed to act as overseer and aid the commissioner as to where money is needed most, etc. The by-law is so complete that no further improvement has been discussed as yet. Wooden bridges are of late beginning to rot down. Wooden bridges will be replaced by stone bridges; that is, rock abutments, hard heads for filling up, and wooden spans. Other municipalities have noticed, since we have adopted the commuted statute labor system, a vast improvement on the roads.

MIDDLESEX.

The county council of Middlesex maintains 125 bridges, which are being rapidly re-built with steel and concrete, the latter being used for floors, abutments and short span arches. There is one toll road in the county, 10 miles in length. Gravel is fairly well distributed, and is freely used by all the townships in their road work, and there is a considerable extent of gravel road throughout the County.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	Number of steel bridges.	Number of concrete culverts over four feet span.
Adelaide	Abolished	120	80		Gravel	One grader		
Biddulph	Worked out	115	85		"	"	2	
Caradoc	" "	200	75		"	"	1	1
Delaware	Commuted	69			"	"		
Dorchester North	"	150	50		"		3	
Ekfrid	Worked out	145	50		A little gravel	One grader		1
Lobo	" "	165	140		Gravel	"	3	5
London	" "	297						
McGillivray	" "	200	150		Pit gravel	One grader	2	4
Metcalfe	" "	100	42		No gravel in township	"	5	2
Mosa	" "	165						
Nissouri West	" "	114	nearly all		Very little gravel	One grader	3	
Westminster	Commuted	200	150		Gravel	Two graders	2	
Williams East	Worked out	100	80		"	One grader		1
Williams West	" "	105						

EKFRID. We still have faith in our system of having the individual on each road contribute, by voluntary subscription, one-half the cost of permanent improvements.

LOBO. Pathmasters are allowed to pay ten cents per hour for opening roads only when necessary. Very little money was spent last year as the farmers kept roads fairly well tracked.

METCALFE. During the present year there were five steel bridges built; one a 90 foot span, one 60 feet, one 40 feet, and two of 20 feet span, four of which are on concrete abutments and one on piles. There are two concrete arches of I think 10 feet span, built two and three years which are giving good satisfaction.

NISSOURI WEST. There is not much trouble in respect to keeping snow roads open as wire fences along the roadsides prevent drifts.

WESTMINSTER. Statute labor is wholly commuted at forty-five cents per day. There are four road divisions and four commissioners. Sometimes we use the grader to keep the roads open in winter and sometimes plough them out. As a general rule we shovel them out, but seldom have much trouble where there are wire fences. If any party or parties wish to contribute towards improving any section of a road by putting on gravel, the council gives dollar for dollar.

MUSKOKA DISTRICT.

Muskoka not yet having county organization, road construction rests entirely with the local municipalities, aided to some extent by Provincial grants for colonization roads. Three townships are commuting their statute labor: and three are using steel and concrete in bridge construction. Gravel is not, as a rule, plentiful or of a good quality; but rock is abundant and will, no doubt, be utilized for road-making, as the available agricultural land becomes more fully occupied.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in townships.	Road machinery.	Number of steel bridges.
Brunel	Worked out	120					
Cardwell	" "	60			Very little gravel		
Chaffey	" "	125			Gravel	One grader	
Draper	" "	80	3		Very little gravel		1
McLean and Ridout	" "	30			" "		1
Macaulay	" "	60	2	2	" "		
Medora and Wood	Commuted	100			Gravel	One grader	
Monck	"	60	7		Little gravel	"	
Morrison	Worked out	55			Gravel	"	
Muskoka	" "	90			Little gravel	"	1
Oakley	" "	40			" "		
Ryder	" "	100	10		Gravel plentiful		
Stephenson	" "	120					
Stisted	" "	125			Very little gravel		
Waters	" "	9			" "		
Watt	Commuted	110	c'nsid'rable		Gravel	One grader	

CHAFFEY. We will soon abolish the statute labor system. Our main roads are fairly good. The use of the road grader is a great advantage. We would like to see a Provincial law passed to compel all farmers and others to use four-inch tires on their wagons and other heavy vehicles.

DRAPER. The roads have been a good deal improved by considerable blasting of rock to allow water to get away on roadsides and blasting rock on ridges crossing roads.

MCLEAN AND RIDOUT. One steel bridge is now in course of erection, two spans, 100 feet each, the superstructure costing, with steel joist, $2,816, and the sub-structure, without approaches, about $2,000. We are using concrete for piers and abutments for new bridge.

MEDORA AND WOOD. Statute labor has been wholly commuted at $1.00 per day, with ten road divisions, and ten overseers. It has been proposed to do away with commutation—collecting road money with general rates. The roads have improved since statute labor was abolished. We spend all commuted labor, and make grants to bridges—making stone piers and narrowing span where possible.

MONCK. Statute labor is commuted at $1.00 per day. There are seven commissioners.

NIPISSING DISTRICT.

There is no county organization, and the roads are maintained by the local municipalities, with Provincial aid to colonization roads. Gravel is not plentiful, but when more fully settled, broken stone will no doubt be the metal generally used.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township	Road machinery.
Bonfield	Worked out	100			Gravel	
Caldwell	" "	15			Little gravel	One grader
Calvin	" "	65				
Cameron	" "	60			Gravel	
Dymond	" "				Very little gravel	
Ferris	" "	50			" " "	
McKim	" "	25	4		" " "	
Mattawan	" "	20			" " "	
Papineau	" "	50				
Rutter and Dunnett	Commuted	50			Little gravel	One grader
Springer	Worked out	75			" "	" "
Widdifield	Commuted	80	Very little.		Gravel	

NORFOLK.

The County maintains a number of bridges on the county boundary and about six miles of toll road recently purchased. While the question of improved road methods has been given some attention and commutation of statute labor proposed, yet the townships of this County are remarkable for the fact that not one has as yet done away with the performance of statute labor. Both gravel and stone are scarce in the County, adding to the difficulty of road improvement.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 ft. span.
Charlotteville	Worked out	200	No record		A little gravel	One grader	2	6
Houghton	" "	200	20		" "			2
Middleton	" "	111	30		" "	One grader	4	
Townsend	" "	230	No record		Gravel plentiful	" "	10	5
Walsingham North	" "	95						
Walsingham South	" "	78						
Windham	" "	215	72		Gravel			4
Woodhouse	" "	100	30	20	Stone and Gravel	One grader	5	5

WOODHOUSE. Two commissioners were appointed this year to supervise bridge repairs and culvert building.

NORTHUMBERLAND AND DURHAM.

The united counties of Northumberland and Durham maintain twelve county bridges, and in the opening of new roads make occasional grants to the townships. Concrete and steel are now being used for bridge work; a bridge erected in 1904, having concrete abutments and floor. There are three toll roads in Northumberland, aggregating 15 miles in length. Gravel is fairly plentiful and stone is obtainable, several of the townships using crushers. Two townships, Murray and Percy, each report the construction of a steel bridge.

Township.	Statute labor.	Total road Mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.
Alnwick	Worked out	70	40	1	Gravel plentiful	One grader
Brighton	" "	150	All in places		Gravel and stone	Rock crusher
Cramahe	" "	150	no record		Gravel	One grader
Haldimand	" "	300	" "		"	" "
Hamilton	Commuted	283	200		"	" "
Monaghan, South	Worked out	40	30		Little Gravel	
Murray	Partly commuted	240	15	2	Gravel and stone	One grader
Percy	Worked out	150	12		" "	A grader and crusher rented
Seymour	" "	198				Crusher
Cartwright	Worked out	96	Leading roads		Gravel	None
Cavan	Commuted	180	90		"	One grader
Clarke	Worked out	308	180		"	" "
Darlington	" "	200	60		Stone and a little gravel	" "
Hope	" "	175	60		Stone and gravel	Two graders
Manvers	" "	207			" " "	One grader

HAMILTON. Statute labor is wholly commuted at forty cents per day. There are five road divisions and five overseers. There has not been any change made, but I think it is a mistake to put the amount less than fifty cents per day. This year, 1904, we had an inspector with the grader to assist with the work, act as time keeper, etc., and to report once a month. This was satisfactory. The council let contracts to some party in the neighborhood of the public mail roads at so much for the winter months to keep snow roads open.

MURRAY. In two road divisions labor is commuted at fifty cents per day. To commute the whole of the statute labor at fifty cents per day is proposed.

ONTARIO.

The county council has expended about $40,000 on leading roads through the County, and in building bridges and granting aid for bridges which the County is not liable to maintain. Ten bridges are maintained exclusively by the County, and two conjointly with Simcoe, Victoria and York. Steel and concrete are now being used in bridge construction by both the County and the townships. Half the townships commute their statute labor. Gravel is fairly plentiful and broken stone is used to some extent.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Brock	Worked out	140	No record		Gravel	One grader		
Mara	" "	164	70	15	Very little gravel	" "		
Pickering	Commuted	274	129	5	Gravel			
Rama	"	100	5		Stone and gravel	Two graders and one crusher	9	
Reach	"	165	80		Gravel	One grader	3	
Scott	Worked out	80	40		"	Two graders		2
Sengog	" "	25	Nearly all		"	One grader		
Thorah	Commuted	102	65		"	" "		
Uxbridge	Worked out	110	40		"	" "	1	
Whitby East	Partly commuted	121	No record		"	" "		
Whitby	Commuted	125	60		"	One grader and one road roller	7	1

PICKERING. Statute labor is wholly commuted at sixty cents per day. There are twenty-one road divisions and twenty-one overseers. In 1904 the rate per day for commutation was raised to seventy-five cents; no other change was made. A closer supervision of the work of road commissioners by members of the council, and some attempt to remedy the complaints of ratepayers on the less public roads, of neglect to make repairs thereto, is discussed. The matter of keeping snow roads open is one of great expense. A great deal of wire fencing has been erected and bonused, with good results. When all roads liable to drift are so fenced it will reduce the expenditure very much. In recent years from $400 to $500 has been paid annually as bonuses, and in some years $800 to $950 for breaking roads and shovelling snow. Additional commissioners are appointed in each road division to keep snow roads open during winter—each having certain roads to look after. They hire men and teams to do the work and report cost to council.

RAMA. Statute labor has been wholly commuted at seventy-five cents per day. There were five road divisions and five road overseers. The rate is now changed to fifty cents per day with six road divisions and six commissioners. The dealers in town sell wagons with three-inch tires and our farmers buy them. If they kept four-inch tires I suppose they would be bought. Some use wrought iron wheels with four-inch tires. In Rama the roads are a very expensive item, many bridges are necessary, and a long stretch of road has in many cases to be maintained for the benefit of one, two or three settlers. Some think commutation is too costly as done at present. More work is, however, done for dollars than by statute labor. No general directions are given to commissioners. There is no general plan of improvement. Both commissioners do their work in their own way.

ONTARIO.—*Continued.*

REACH. Statute labor is wholly commuted at sixty cents per day. There are fifteen road divisions and fifteen overseers. A bonus is granted of twenty-five cents per rod for wire fences built on north and west sides of road where snow usually drifts; but no bonus for barb wire fences. Ten per cent. of the commuted statute labor and appropriations to each division are reserved for keeping roads open during sleighing. The commissioners do as little shovelling as possible; simply have teams travel on top of snow where it is possible to get through. The council and commissioners are doing their utmost to make permanent what they can do each year. In driving through the township last fall I was pleased to find a very great improvement on leading roads.

THORAH. Statute labor has been wholly commuted at fifty cents per day, with one road overseer for township. No change has been made from last year except two commissioners for township in place of one.

WHITBY. Statute labor is wholly commuted at sixty cents per day, with ten road divisions and ten overseers. Our bridges of both concrete and steel are giving good satisfaction. The concrete abutments are all right if you have good foundation. The wire fence where built generally obviates the difficulty in the matter of drifts from snow roads. We are this season trying snow fences in a few places for cuts and gullies. The condition of roads in township is generally good. No special effort being made—they could be improved I think if road divisions were still decreased in number and in the hands of a road commissioner for general direction, and a more continuous system would be an improvement.

OXFORD.

Commencing with this year, and for the ensuing 20 years, the county council will grant $30 per mile towards the improvement of 251 miles of road, the work to be performed by the townships. Included in this mileage are nine toll roads purchased in 1904 for $53,034.80. The county maintains 128 bridges, in the re-building of which steel and concrete are being used,—the latter for abutment floors and short-span arches. Gravel is fairly well distributed, but broken limestone is used by a few townships, together with crushed gravel. There are a number of concrete arches in the county between 20 and 30 feet in span.

Township.	Statute labor.	Total road mileage.	Miles Gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Blandford	Worked out	63	60		Gravel	One grader	2	
Blenheim	Commuted	182	182		"	"	10	1
Dereham	Worked out	142	No record		"	"		
Nissouri, East	"	134	90		"	"		6
Norwich, North	Commuted	99	No record		Little gravel	"	3	1
Norwich, South	"	98	"		Gravel	"	3	
Oxford, East	"	105	75		"	"	1	4
Oxford, North	Worked out	63	No record		Very little gravel	"	2	
Oxford, West	Commuted	107	"	2¾	Gravel and stone	A grader and rock crusher		1
Zorra, East	"	162	147	11½	"	Two graders & crusher rented	13	4
Zorra, West	Worked out	153	60	5	Stone and a little gravel	One grader	9	3

Blandford. A couple of years ago our township passed a by-law to commute statute labor at fifty cents per day where the majority of a division petitioned for same. This did not work satisfactorily and the by-law was repealed and nothing has been done in that direction since.

Blenheim. Statute labor is commuted in fourteen divisions at fifty cents per day. The matter of snow roads is a serious difficulty in our township. Wire fences have overcome many difficulties, and we shovel where we have no wire fences. We think counties should be compelled to assume all township line roads.

[illegible]. There is a strong tendency toward better roads. More is being expended for road making, but the scarcity of men to do the work at the proper time is a great hindrance.

Missouri East. We generally try to use concrete tile culverts for almost any size of stream up to six feet wide, using three feet thirty-nine inch, forty-five inch and four feet concrete tiles, and they give general satisfaction where they are well put in. Almost all of the farmers are using from three to four inch tires to the great benefit of the roads. Tires less than four inches should be prohibited by law. We have two-thirds of our road fences made of wire and the rest will soon be wire. There has been more good work done on the roads the past two years than in six years before, especially was this the case in 1903.

Norwich South. Statute labor is wholly commuted at fifty cents per day. There are fifty-five divisions and fifty-five road overseers. There is a feeling of doing away with the overseer system and placing a commissioner in charge. I anticipate that it will be submitted to the ratepayers in January.

Oxford West. Statute labor is wholly commuted at fifty cents per day. There were two road divisions and two road commissioners but we have had one commissioner during the past season, which works quite satisfactorily. There is one concrete bridge 22 feet span. We use concrete tile for all culverts, some as large as 39 inches in diameter. We have a snow commissioner in each school section. Roads are in good condition. The council aims as far as possible, to expend the public funds devoted to roads and bridges, that both shall be of a more permanent nature. We believe under the present system our roads are becoming more uniformly good.

Zorra East. Statute labor is wholly commuted at fifty cents per day. There have been 101 road divisions and 101 overseers. I think that next year (1905) will see three or five commissioners instead of 103. The number was increased in consequence of purchase of toll roads. Four concrete bridges were built this and last year. These bridges are giving first-class satisfaction. We have three concrete floor bridges and they are pronounced fine. Ten cents per rod is the amount of bonus given for construction of wire fences, and on the west and north side of the roads they are practically all completed. We take full advantage of chap. 240, R. S. O., and have very little trouble with snow drifts now. Even last winter (1904) we could travel at any time.

PARRY SOUND DISTRICT.

There being no county organization, road construction is dependent upon Provincial colonization road appropriations, and [illegible] the local councils. Gravel is scarce, but granite suitable for crushing is abundant. A number of the townships are using grading machines with good results, even in very stony districts.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.
Armour	Worked out	75	5		A little gravel	One grader.
Carling	" "	28			" "	" "
Chapman	" "	48			" "	
Christie	" "	55			Gravel	One grader.
Foley	" "	80			Little gravel	
Hagerman	" "	30			" "	One grader
Himsworth North	" "	40	5		" "	One grader
Himsworth South	" "	60	4		" "	" "
Humphrey	" "	50			" "	
Joly	" "	30			" "	
McDougall	" "	50			" "	
McKellar	" "	50			" "	
McMurrich	" "	50	5		Gravel	One grader.
Machar	" "	100			Little gravel	
Nipissing	" "	400			No gravel in township	
Perry	" "	120				
Ryerson	" "	80				
Strong	" "	150			Little gravel	

CHRISTIE. Some of the older roads are getting in pretty fair condition. The grader has helped considerably in making the roads a better shape where it is worked, but it can not be worked to advantage under the system of statute labor.

NIPISSING. We asked electors at late municipal election if they wished to abolish statute labor. Over half did not vote on the question at all, but majority were in favor of statute labor. People did not understand it.

PEEL.

The County maintains 8 or 10 bridges in accordance with statute, while there are in the County about 25 bridges of from 20 to 40 feet span. All bridges of importance are being reconstructed with steel and concrete. The County has provided a rock crusher for the use of the local municipaliti s. Gravel is not, as a rule, plentiful, and broken stone has been used to some extent.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.
Albion	Worked out	168	16	1	Stone and very little gravel.		
Caledon	" "	200	50		Gravel plentiful	Two graders	2
Chinguacousy	" "	240					
Toronto	" "	270	25	7	Gravel and stone	Three graders	3
Toronto Gore	Abolished	80	8		Very little gravel	One grader	2

TORONTO GORE. Statute labor is abolished. There are now two road divisions and two commissioners. The roads are very much improved since the introduction of the grader, but there is great room for improvement still.

PERTH.

A county grant of $4,000 is made annually for road improvement and is distributed among the townships on the basis of equalized assessment. In addition the County maintains all bridges on township boundaries over 25 feet in length. On county boundaries Perth conforms with arrangements of the adjoining counties. In this work concrete and steel are being used, the former for floors and abutments. Some townships in this County have done more than commute statute labor, having entirely abolished it, money for road purposes being collected by special township rate. Gravel is fairly well distributed, but is becoming scarce, and local limestone has been used.

Township.	Statute abolished.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Blanshard	Abolished	138						
Downie	" "	120	95	10	Gravel and stone	A grader and crusher rented	12	Several.
Easthope North	Worked out	115	86	1	Gravel	Grader	1	2
Easthope South	" "	66	46	1/2	Little gravel	"		1
Ellice	" "	150	Nearly all	1	Gravel becoming scarce	"	1	
Elma	" "	160						
Fullarton	Abolished	75	70	1	Gravel becoming scarce	One grader	17	5
Hibbert	Worked out	89						
Logan	Abolished	141	70		Gravel	One grader	5	
Mornington	Worked out	120	Nearly all		A little gravel	Grader hired	5	2
Wallace	" "	128½	"		Gravel	One grader		

Downie. Statute labor is abolished. There are now five road divisions and five road commissioners. The council some years ago granted a bonus of twelve and a half cents per rod on the main roads for the construction of wire fences, but timber is so scarce farmers are now compelled to build wire fences without a bonus.

Easthope South. Our council are discussing the use of crushed stone, and about one quarter of a mile has been laid down as a test. Since wire fences have been built along the roads, no serious blockades have occurred, but when they do occur the roads are opened at cost of the township treasury. The general condition of the roads is good, but with traffic increasing from year to year, with narrow tires under heavy loads, and the gravel pits giving out, there is danger of the roads soon deteriorating. Freight rates on stone from St Marys (nearest point) are high, and make crushed stone costly.

Fullarton. Statute labor is abolised, and we now have five road divisions and five overseers. Our bridges are all built of steel and stone walls, and we are now putting in all culverts of cement or sewer pipe. The matter of snow roads is quite a difficulty in our township, but pathmasters are appointed yearly, whose duty it is to employ help and so keep the roads open. The council pays ten cents per hour for a man and twenty-five cents for man and team.

Logan. Statute labor is abolished. There are five road divisions and five overseers. In keeping snow roads open, that is, the main roads, the road grader is placed on a sleigh to open roadway in winter when drifts occur.

PETERBORO.

The county council makes grants to the townships for road improvement, and maintains 24 bridges, in which steel and concrete are being used for re-construction. A number of the northerly townships are sparsely settled, and have been aided by colonization road grants made by the Provincial Government. Gravel is not uniformly distributed, and several of the townships are using broken stone, having purchased stone crushers Only one township, Douro, reports a steel bridge.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.
Asphodel	Worked out	111				
Belmont, etc	"	200		7	Stone and a little gravel	One rock crusher.
Burleigh, etc	"	100	10	2	" "	" " "
Chandos	"				No gravel in township	
Douro	"	170	All partially		Gravel	
Dummer	"	150	50		"	
Ennismore	"	70	70		"	One grader.
Galway, etc	"	120			Little gravel	
Harvey	"	94			Gravel	
Monaghan, North	Commuted	45	25		"	" "
Otonabee	Partly commuted	200	200		"	" "
Smith	Worked out	150	No record.	6	Stone and gravel	One grader and one rock crusher.

BURLEIGH. The council are discussing a proposition to build a stone road on main road to Lakefield, from Apsley to Burleigh Falls, twenty miles. The township owns one rock crusher, bought on 23rd May, 1904, for $1,050, the capacity of which is from twelve to fourteen cords per day. A 13 horse power engine, at a cost of $800, to run the crusher, was also purchased. To keep the roads open in winter is a serious difficulty in our township. After a storm the farmers have to turn out with plank snow ploughs and open all the main roads.

MONAGHAN NORTH. Statute labor is wholly commmuted at seventy-five cents per day. There are four road commissioners and four road divisions. Concrete culverts are giving entire satisfaction. Our roads have improved very much and the commutation tax of seventy-five cents per day very nearly keeps them in good shape for traffic. Bridges and culverts are built from township funds.

OTONABEE. We have had a good overseer for the last five or six years who oversees the expenditure of about $1,600 annually, and the work he does is uniform and of first-class quality.

UNITED COUNTIES OF PRESCOTT AND RUSSELL.

The county council grants no aid for roads, but makes occasional grants for bridges; the County maintaining four bridges, in which steel is being used for reconstruction. Gravel is not uniformly distributed, and broken stone is used by several of the townships, three owning stone crushers. There is one toll road, 14 miles in length, in the county of Russell.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.
PRESCOTT—							
Alfred	Worked out	70			Gravel	One grader	
Caledonia	"	132	Very little		Little gravel		
Hawkesbury, East	Partly commuted	100	10	10	Gravel and stone	Two graders and one crusher	
Hawkesbury, West	Worked out	60	25	10	" "	One grader and one crusher	
Longueuil	"	45	8		Stone and little gravel		
Plantagenet, North	"	175	1		Gravel	One grader	2
Plantagenet, South	"	150					
RUSSELL—							
Cumbridge	"	100	1	2	Stone and gravel	One grader	
Clarence	"	100	No record.	2	Broken stone (no gravel in township)	"	
Cumberland	"	165	1	1	Gravel	Two graders and one rock crusher	
Russell	"	150	Very little		Little gravel	One grader	5

ALFRED. The matter of snow roads is a serious difficulty in our township. Snow plows are used and give good satisfaction.

HAWKESBURY WEST. To keep the road open in winter is a serious matter in our township. The only remedy we have is by snow plows, and the work is let by contract.

CUMBERLAND. We have purchased a rock crusher and purpose using it, the council to pay for running it and statute labor to spread the gravel.

PRINCE EDWARD.

The county council appropriates $1,000 annually to aid township roads; maintains two miles as a county road, and four bridges in which steel and concrete are being used. Gravel is not well distributed and broken stone is being used to some extent.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Amellasburg	Worked out	80	40	18	Gravel	A grader and rock crusher	2	
Athol	"	69			Very little gravel	One grader		
Hallowell	"	129						
Hillier	"	130			Gravel		2	1
Marysburg North	"	69						1
Marysburg South	"	69	No record	No record	Gravel and stone	One grader	1	
Sophiasburgh	"	129	"	"	" " "	"		

AMELIASBURGH. Partial commutation of statute labor was in force for one year and worked well, and if legislative enactment made commutation compulsory or totally abolished the system of performing labor, I think it would be a move in the proper direction.

RAINY RIVER DISTRICT.

The district is without county organization and roads are as yet built largely by the Provincial Government as colonization roads. Gravel is not plentiful, and dependence will have to be placed on broken stone for road construction.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.
Alberton	Worked out	18	2		Little gravel	
Atwood	Commuted	5	1¾		"	One grader
Chapple	Worked out	No record			"	
Emo	"	"			No gravel in township	
Keewatin	Commuted	10				
McIrvine	"	5	4		Gravel	
Van Horne	Worked out	40	5			

RENFREW.

The County maintains seven bridges, one of stone, one of steel and stone, and the remainder of timber. No assistance is given to township road construction. Gravel is not uniformly distributed, but stone is plentiful and will ultimately be more generally used by the townships. Portions of the county are as yet sparsely settled.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.
Admaston	Worked out	150	4		Little gravel	One grader	
Algoma South	"	100			Gravel		
Alice, etc	"	250			"	One grader	
Bagot and Blythefield	"	100			Little gravel		2
Bromley	"	80	10	1	"	One grader	
Brougham	"	54					
Brudenell and Lyndoch	"	80			Gravel		
Grattan	"	160		$1\frac{1}{4}$	"		
Griffith, etc	"	120			"		
Hagarty, *et al*	"	180			Little gravel		
Head, *et al*	"	40			"		
Horton	"	111	4		Gravel	One grader	
McNab	"	150	No record	No record	Gravel and stone	Two graders	
Pembroke	"	25	$1\frac{1}{2}$	1	Little gravel	One grader	
Petewawa	"	50			Gravel		1
Radcliffe	"	34			"		
Raglan	"	26			"		
Rolph Buchanan and Wylie	"	95			Little gravel		
Ross	"	150	No record	2	Gravel	One grader	
Sebastapol	"	55			No gravel in township		
Stafford	Commuted	50	2		Little gravel	One grader	
Westmeath	"	200	10		Gravel	Two graders	
Wilberforce	Worked out	180			Little gravel		

PEMBROKE. We have appointed a road commissioner in our township, but that is the only change in our statute labor, which is worked out.

ROSS. The council offers to provide half the wire when fences cause snow to block road. Last winter the road machine was used on some of the snow roads with good effect. The council has been considering the advisability of raising money for the improvement of roads in the townsip.

WESTMEATH. Statute labor is wholly commuted at seventy-five cents per day. There are two road divisions and two road commissioners. The council are contemplating having more commissioners so that details will receive more consideration. We are using concrete culverts for the last two years with good satisfaction. Road overseers are appointed for the winter months, one for each school section and they give good satisfaction. The general condition of the roads is fairly good. Having commuted the statute labor at seventy-five cents per day, and there being some dissatisfaction, a vote was taken to return to statute labor but it was defeated.

SIMCOE.

The county council maintains a county system of 427 miles, to which there is fuller reference elsewhere in this report. In addition to the bridges on these roads the County maintains 18 bridges on streams over 80 feet in width. Concrete and and steel are now being used in their construction, the former for abutments and floors. Gravel is not uniformly distributed and broken stone is used in several townships. A number of the townships have commuted or abolished statute labor and are doing excellent work.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Adjala	Commuted	96	25		Gravel	Two graders		
Essa	"		5		"	"		
Flos	Worked out	186	20		Stone and a little gravel	"		
Gwillimbury West	"	120	No record		Gravel	One grader		
Innisfil	"	250	Nearly all		Little gravel	"		
Matchedash	"	30	"	Partially	Stone and gravel		1	
Medonte	"	200	50	3	"	Two graders		
Nottawasaga	"	150	30	2	Stone and a little gravel	A grader and a rock crusher		
Orillia	Abolished	275	55	1½	Gravel	One grader		
Oro	Worked out	150	80		"	"		2
Sunnidale	"	165	35		Little gravel	"		
Tay	"	110	10		Gravel	"		
Tecumseh	Abolished	160	10		Little gravel	Three graders		
Tiny	Worked out	234	20		Gravel	Two graders	1	
Tossoronto	Commuted	70	5		Little gravel	"		
Vespra	Worked out	186			Gravel	"		

ADJALA. Statute labor is wholly commuted at sixty cents per day. There are six road divisions and six road commissioners. Concrete was used in 1904 for the first time, and only then in pipes made with moulds purchased from a road machinery company, which are satisfactory and will be used instead of vitrified pipe or cedar. To keep road open in winter has been considerable trouble, but since statute labor is commuted men have been appointed to look after a certain section, and the cost of keeping them open has not been so great. Roads are not, as a rule, in good condition in this township, but under the new system more has been done in 1904 than for four years previously.

ESSA. Statute labor is commuted in the Township of Essa at sixty cents per day, and a considerable amount of good work has been done, but there is quite a lot of opposition from the ratepayers. Everything would be all right, but such men are not always available for the position. Next year it is believed the councillors will supervise the work. We are putting in considerable concrete and vitrified pipe, from two feet down to ten inches, in culverts, and they are giving good satisfaction. Quite a few farmers are getting three-inch tires, but none four-inch. Since we commuted statute labor we intend to pay men for keeping the roads open in winter.

MEDONTE. Roads are steadily improving. Directions for making roads from Commissioner Campbell are printed on the back of each statute labor list sent out each year, in addition to other duties mentioned on list.

SIMCOE.—*Continued.*

ORILLIA. Statute labor has been wholly commuted at fifty cents per day. There are six divisions and six road overseers. Statute labor was abolished this year. Since commuted four years ago, the roads have been rapidly improving, and now compare favorably with the best townships in that particular. Good roads is a live question and is being worked out intelligently and with the utmost satisfaction to our ratepayers. This year our township will expend over $4,000 on roads, and the ratepayers generally think they have got value.

SUNNIDALE. We have a considerable number of cement culverts from eight to twenty-four inches in diameter and they are highly satisfactory. I believe it is only a question of time until all our culverts will be cement. The roads are improving in the township. The council hires teams and men for the grader, and each year grades large stretches of roads. We find to have regular men and teams for the grader better than having fresh, untried ones for each division The council by doing the grading enables the people to gravel the roads with their statute labor. On account of the country fast being stripped of timber, the winds have great sweep and roads that are fenced with any other material than wire are blocked by every storm. On the contrary, where fences are of wire the roads are nearly always good. To encourage the erection of wire fences, the council are offering a bonus of fifteen cents per rod for all wire fences along highways.

TECUMSEH. Statute labor is abolished. There are six road divisions and six road commissioners. Road commissioners appoint a person on every two or three miles of the road to open up the roads after a snow storm.

TOSSORONTIO. Statute labor is wholly commuted at fifty cents per day. There are now five divisions and five commissioners. Commissioners hire men at fifteen cents an hour and teams at thirty cents an hour when snow blocks roads. Systematic work is being done by commissioners.

THUNDER BAY DISTRICT.

The district is not organized, and roads are maintained by the Provincial Government (colonization roads) and townships. Statute labor is all commuted.

Township	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of concrete culverts over 4 feet span.
Neelands	Commuted	75			Gravel	One grader	
Oliver	"	80			"	Grader rented	
Schreiber	"						1

VICTORIA.

The County of Victoria has recently passed a by-law establishing a county road system, which will go into operation in 1905, in accordance with The Highway Improvement Act. Some years ago the county council purchased a rock crusher which is rented to the local municipalities as they require it. Gravel is not, as a rule, plentiful in the County, and broken stone is coming into use. The County maintains a number of bridges in which steel and concrete for floors and abutments are being used. The township of Ops reports one large concrete culvert, and Somerville one steel bridge.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.
Bexley	Worked out	51	No record	¼	Gravel	
Carden	"	50	10	Very little.	"	
Dalton	"	40	8		Little gravel	
Eldon	"					
Emily	"	148	74	1	Gravel	One grader
Fenelon	"	150	50		"	
Laxton, etc	"	80			Little gravel	
Mariposa	"	200	150	5	Gravel	One grader
Ops	"	180	40	Partial	Stone and a little gravel	"
Somerville	"	150			A little gravel	
Verulam	"	200	No record	2	"	One grader

FENELON. Snow roads are a serious matter in our township and the erection of wire fences as yet is slow. Roads are opened in the fields when they get bad, and it is almost impossible to turn out in many places. I believe we need a passable road in winter rather than in summer, as farmers do more business driving in winter and the roads are quite passable in summer. Wire fences will solve the difficulty to a great extent. In the matter of wide tires, which I think would lengthen the life of any improvements made on roads, farmers will not feel much like using them until council instructs pathmasters to remove all loose stones and all solid ones that are above level of track. This is my experience with my "handy." It would run fine on the road but for the stone. I have built a platform 7 x 14 feet on mine and find it extremely handy for all sorts of loads, hay, grain, manure, bags, in fact any kind of load on farm or road, but the stone is its enemy.

OPS. A few miles of broken stone have been put on yearly for the past five or six years. It is very costly, but the result is good Shale rock is utilized as gravel in some parts of the township, but it seems to incorporate itself with the mud rather than form a solid, permanent bed like gravel.

SOMERVILLE. The roads have improved in the last few years, but until the system is changed the improvement will be slow. In fact I see no prospect of further improvement with statute labor system, which should be abolished by legislative action.

WATERLOO.

The county council maintains 29 county bridges, in the construction of which steel and concrete are being used. The work is in charge of the "County Bridges Committee," and an engineer is usually employed to prepare designs and specifications. Where this has not been done, difficulty has arisen. One concrete floor has been laid, and more will follow, as this is very satisfactory. Gravel is fairly plentiful, but broken stone has been used in one township. There is one short toll road in the county, about one mile in length.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Dumfries, North	Worked out	100	50	2	Stone and gravel	One grader		
Waterloo	"	250	150		"	"	7	
Wellesley	"	198						
Wilmot	"	150	120		Gravel	One grader	6	3
Woolwich	"	150	Nearly all.		"	"	4	

WILMOT. A few trials of the disc harrow, when snow is hard in spring, have proved very beneficial. Our roads are on the whole very good; the improvement now being advocated, is to use concrete for culverts where possible and to grade a uniform width.

WELLAND.

The county council maintains 15 bridges, in which steel and concrete are being used, as reconstruction becomes necessary. Roadmaking is a matter of considerable expense and difficulty, as gravel is not plentiful, and outcroppings of stone are scattered. In half the townships of the County, statute labor is commuted, and the use of road machinery is very general.

Township.	Statute labor	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Bertie	Commuted	130	10	15	Stone and gravel	Two graders and one crusher, and one roller	2	9
Crowland	Worked out	150			Gravel	Two graders	1	1
Humberstone	" "	200	8	18	Stone and gravel	" "		10
Pelham	Commuted	150	10	7	" " "	Two graders and one roller		
Stamford	"	100	10	15	" " "	Three graders		
Thorold	"	66						
Wainfleet	Worked out	240	10	5	Stone and gravel	One grader		1
Willoughby	" "	100			No gravel in township	" "	1	2

BERTIE. The statute labor is now commuted at $1.00 per day. Eight road commissioners employed, and every one is given a chance to work out their road tax. Our council is discussing the entire abolition of statute labor and raising road funds by a general rate. We have two graders and one rock crusher and one road roller. The crusher was bought in 1896 and cost $800, having a capacity of from 12 to 20 cords. The road roller was purchased in 1901. Snow roads are a serious difficulty in our township. The township council appoints overseers whose duty it is to see to the snow roads. There has been considerable improvement of late years in the condition of the roads—the result of commuting statute labor—but there is a tendency to retrograde—going back to the pathmaster system by subdividing, and appointing more commissioners who boss small gangs and work out their tax.

CROWLAND. Roads are getting better where the road machines are used, and the road crowned so as to allow water to flow off.

HUMBERSTONE. Our township is using quarry chips from two limestone quarries operating in this township, which give very good results, also stone from the banks of the Welland Canal.

PELHAM. Statute labor is wholly commuted at fifty cents per day. There are two road divisions and a commissioner for each. The gravel in the township has to be loosened up with dynamite, but it is of excellent quality.

STAMFORD. The township is divided into four polling sub-divisions, in each of which one member of the council acts as commissioner. For the last three or four years about $1,500 per year has been spent for gravel and crushed stone, and the council are getting the main roads in excellent condition.

WAINFLEET. The probability is that statute labor will be done away with, within the present year.

WILLOUGHBY. The condition of the roads in the Township of Willoughby is just about what the pathmaster makes it. If he is a competent man he uses the statute labor to best advantage and is careful to see that it is well drained. The greater part of the roads in this township are clay.

WELLINGTON.

A system comprising 170 miles is maintained by the county, under the Highway Improvement Act. The work is managed by the councillors who are commissioners for their own divisions. In addition to bridges on county roads, the County maintains all bridges over ten feet long on boundary lines. In this work steel and concrete are now being used. Where a township has not a rateable proportion of county roads within its boundaries, a grant is made to the township council to equalize the expenditure. Gravel and limestone are fairly plentiful throughout the County, both being used by the townships; the latter using the county rock crusher.

Township.	Statute labor.	Total road mileage.	Miles travelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Arthur	Worked out	120	75		Gravel	Two graders		
Eramosa	Commuted	120	90	2	Stone and gravel	One grader	2	
Erin	Worked out	200	100		Gravel			1
Garafraxa West	" "	141	25		Little gravel	One grader	1	
Guelph	Commuted	120	Nearly all.	A little	Gravel and stone	One grader & crusher rented	2	
Luther West	Worked out	100	60		" "	Two graders		
Maryborough	" "	135	87		" "	One grader	3	
Minto	" "	160	100		" "	Three graders		
Nichol	" "	70	30		Little gravel			
Peel	" "	204	100		"	One grader	1	
Pilkington	" "	90	Nearly all.		Gravel	Graders used		
Puslinch	Commuted	160	75	2	"	Four Graders	1	

ERAMOSA. What is much needed is a competent engineer to lay out the work on the roads—with a view to permanence and uniformity. Yearly changes in council, even if capable road makers, interfere much with satisfactory work being done.

ERIN. The state of the roads in winter in this part of the country is a more serious matter than the roads in summer.

GUELPH. Statute labor is abolished. There are four road divisions and four overseers. No change has been made in this system and the councillors act as commissioners. We hired a rock crusher from the county about a week, and broke about 300 yards, which I believe has proved very satisfactory. The cost was considerably more than gravel, being about $1.00 per yard finished on the road. We have used concrete tile for several years and it certainly has given satisfaction. Last winter we had considerable difficulty in keeping the roads open on account of the snow, and our remedy was by engaging teams at so much an hour, which proved rather costly. More wire fences are needed.

LUTHER WEST. Snow roads are a serious difficulty in our township, especially in roads leading north and south, and in many places a road or track has to be made through the fields. We procured two snow plows two years ago but they did not prove satisfactory.

WENTWORTH.

A county road system under the Highway Improvement Act was established in Wentworth in 1902, comprising 38 miles of road previously maintained by the county, 29 miles of toll road purchased at a cost of $63,104, and 62 miles transferred by the township. To this was added, in 1904, the last toll road in the county, three miles in length, purchased for $6,000. The work has been in charge of a road superintendent, who appoints foremen when necessary. The machinery used by the county consists of a steam roller, three rock crushers, two graders, plows, quarry tools, etc. There is very little gravel in the County and broken limestone is the principal road metal used. Statute labor is commuted in all townships of the County but two, and in at least one of these, the change is likely to be made in the near future. The county system is effecting a splendid improvement in the heavily travelled roads, and the townships are able to do more work on the remainder.

Township.	Statute labor.	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Ancaster	Commuted	125	3		Little gravel	Two graders		
Barton	"	39			No gravel in township	" "		
Beverley	Worked Out	170	No record		Gravel	" "		
Binbrook	Commuted	70			No gravel in township	One grader	3	
Flamboro East	"	65	No record		Gravel	" "		
Flamboro West	"	55	7	2	Gravel and stone	Two graders & a rock crusher		
Glanford	Worked Out	66			No gravel in township	One grader	3	1
Saltfleet	Commuted	140	2	8½	Stone and lake gravel	Two graders and crusher	1	

ANCASTER. Statute labor is commuted at fifty cents per day, with 23 road divisions and 23 overseers. The township is divided into two grading machine divisions with operators for each division, who supply teams to work continuously until the whole of the grading is completed for the year.

BINBROOK. Statute labor is wholly commuted at fifty cents per day, with 19 road divisions and 19 overseers. No particular change has been discussed except in the building of concrete culverts, and it is propesed to build them altogether. The principal trouble in connection with the roads is with the culverts, as it is very difficult to procure plank; and before long we hope our bridges and culverts will all be built of concrete. We have learned that in grading roads is necessary to do more work and ditch deeper than formerly, or we lose the benefit too soon. In the future we will do less mileage each year but do more lasting work.

FLAMBORO EAST. Statute labor is wholly commuted at fifty cents per day, with five road divisions and one overseer. One division has two overseers, where commutation has existed for four years. The other divisions are managed by the council without any overseers and this is in every way more satisfactory and a great deal cheaper.

FLAMBORO WEST. Statute labor is wholly commuted at fifty cents per day, with three road divisions and three overseers. It has been suggested that overseers be dispensed with and the work be done under the supervision of the councillors, or in other words that the

WENTWORTH.—*Continued.*

Councillors be the overseers. This would be an alteration but not an improvement. There are two grading machines and one rock crusher, the latter purchased in the fall of 1903 (and first used in the spring of 1904), at a cost of $1,000. The capacity is from 12 to 15 cords per day. We have not a township road roller, but on roads that are metalled with stone we have a horse roller owned by the County of Wentworth, the weight of which is, I believe, five tons. There are no concrete bridges or arches of span exceeding four feet, but we have been using concrete culvert pipe of from eight to fourteen inches, and they are giving good satisfaction. Our side lines running north and south are liable to drift, and as a rule farmers open their fields for public traffic, but in the spring when the snow disappears we have to dig through the roads, the cost of which is considerable. A number of people along these roads are taking advantage of the bonus for building wire fences, and anticipate in a few years, when wire fences become general, the item of expense for shovelling snow will be materially lessened.

GLANFORD. The question of abolishing the old system of statute labor comes up every year. It is now optional to either work or commute at fifty cents per day, and the number that pay is increasing every year. Most of the roads in winter are kept open by statute labor, but on some beats they do not make any charge, as they wish to have their roads good, and keep all the labor for the summer. There is great improvement in the roads since the grading machine was purchased, as the roads are better graded and more uniform. On some divisions they still adhere to the old hand scraper, and it is an easy matter to discern where they do not use the grader as the roads are so uneven.

YORK.

The county council of York maintains about 200 bridges, which include all boundary line bridges and all bridges on the old York roads system. In this work, permanent materials are now being used in re-construction, steel for bridge superstructure and concrete and cut stone for abutments, while concrete is also used for bridge flooring. The county engineer having charge of bridge construction is paid by fees. Commutation of statute labor is the rule in the townships. Gravel is not uniformly distributed, but in a part of the County is very plentiful. Broken stone is used in some cases from local quarries.

Townships.	Statute labor	Total road mileage.	Miles gravelled.	Miles stoned.	Road metal in township.	Road machinery.	No. of steel bridges.	No. of concrete culverts over 4 feet span.
Etobicoke	Partially commuted	120	5	30	Stone and gravel	Two graders	5	
Georgina	Worked out	60	45		Gravel			
Gwillimbury East	" "	160	45	2¼	Little gravel	One grader		
Gwillimbury North	" "	90			Gravel			
King	Commuted	200	100		"	Three graders		1
Markham	"	170	100	30	"	One grader and one crusher	4	3
Scarboro	"	160	80		Gravel	Two graders	1	
Vaughan	"	201						
Whitchurch	Partly commuted	150	25		Little gravel	One grader		
York	Commuted	155	No record	No record	" "	Two graders	2	

ETOBICOKE. Steel girders are being used for bridges of twenty feet span and less and are satisfactory.

SCARBORO. Nearly all the culverts are of concrete and are giving good satisfaction.

ANNUAL REPORT

OF THE

Bureau of Industries

FOR THE

Province of Ontario

1904.

PART I.—AGRICULTURAL STATISTICS.
PART II.—CHATTEL MORTGAGES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO,)

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To the Honourable

WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

May It Please Your Honour:

The undersigned begs to present herewith for the consideration of His Honour the Report of The Ontario Bureau of Industries for 1904.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

Toronto, 1905.

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PART I. –AGRICULTURAL STATISTICS.

THE WEATHER.

While the character of the soil and methods of tillage are of great importance in the production of crops, figures dealing with temperature, sunshine, and precipitation of rain and snow are also full of suggestion in the study of agricultural conditions.

TEMPERATURE. The following table shows the average temperature of the Province for each of the six months, April-September inclusive—practically the growing season—for the past ten years, and also the average for twenty-three years, 1882-1904:

Month.	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1882-1904
	°	°	°	°	°	°	°	°	°	°	°
January	10.8	18.5	18.7	19.0	21.9	18.7	20.2	19.5	18.4	17.6	17.5
February	8.8	21.8	18.4	13.0	17.1	15.2	22.6	25.8	19.2	14.5	17.7
March	26.2	37.4	34.0	26.9	20.5	25.8	35.6	29.0	21.2	21.7	26.4
April	37.5	43.5	43.6	45.0	44.8	44.5	42.1	42.7	46.3	45.8	41.7
May	56.1	56.8	53.2	54.6	54.6	55.7	58.3	62.9	60.1	51.9	54.0
June	63.3	60.8	59.2	65.8	64.1	64.8	65.6	60.2	63.8	68.0	63.9
July	66.2	67.3	68.6	71.2	68.2	67.5	70.2	71.9	68.8	66.5	67.8
August	63.3	62.4	63.5	67.5	70.9	68.5	67.7	65.2	67.2	65.3	65.5
September	57.2	59.0	59.0	60.1	62.3	56.2	61.8	60.8	59.8	60.5	58.6
October	45.0	49.2	46.3	48.5	55.2	50.0	48.7	50.1	45.4	41.4	46.7
November	33.6	32.3	41.0	31.9	35.3	38.0	34.9	34.9	37.8	31.5	34.9
December	17.6	17.7	20.9	22.7	24.7	25.1	22.8	24.6	24.1	25.8	23.5
Annual mean	40.5	43.9	43.9	43.9	45.0	44.2	45.6	44.4	44.0	42.9	43.2
Mean for six months, April to September	57.3	58.3	57.9	60.8	60.8	59.5	60.5	58.9	60.7	59.9	58.6

The mean annual temperature was 40.5°, which was 3.4° lower than that of each of the three years immediately preceding, and 2.7° below the average for the twenty-three years 1882-1904. The mean for the six growing months, April-September, was 57.3°, which was 1.3° lower than the average for the twenty-three years period. January, with an average of 10.8°, and February, with an average of 8.8°, fell greatly below their usual records of temperature; March was about normal; April was 4.2° below its average, which the average for May was 2.1° higher than its average for the twenty-three years. The summer and autumn months showed no striking variations in temperature, but December averaged only 17.6°, which, while about the same as in the preceding year, was 5.9° below its average for the twenty-three years.

PRECIPITATION. The fall of both rain and snow for the five months, including November, 1903, and March, 1904, is given in the following table for ten years, together with the average for the twenty-three years, 1882-1904. An inch of water is the equivalent of ten inches of snow:

Year.	November.		December.		January		February		March.		Total for five months.	
	Rain.	Snow.	Rain.	Snow	Rain.	Snow	Rain.	Snow.	Rain	Snow	Rain	Snow.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1904	0.98	7.2	0.71	24.1	0.48	24.9	1.04	14.7	1.78	9.4	4.99	80.3
1903	1.60	4.0	1.06	14.6	0.78	19.8	1.31	13.6	1.92	1.7	6.67	53.7
1902	1.25	8.0	1.85	14.2	0.10	20.4	0.56	12.1	2.34	2.5	6.10	57.2
1901	2.99	10.4	0.51	8.6	0.58	28.8	R	17.6	1.60	13.1	5.68	68.5
1900	1.13	1.0	2.15	14.5	0.72	25.8	1.68	26.8	0.53	18.8	6.21	76.9
1899	1.67	9.6	0.74	24.6	1.50	33.2	0.76	8.0	1.78	22.1	6.45	97.5
1898	3.40	8.9	1.73	17.5	1.47	28.2	0.60	18.9	2.42	1.0	9.62	74.5
1897	2.51	6.2	5.37	9.6	1.15	17.3	0.89	14.1	1.92	12.7	11.84	59.9
1896	2.47	7.7	2.22	13.2	0.65	17.1	0.46	24.5	0.74	32.4	6.54	73.9
1895	0.78	11.4	1.49	6.6	0.77	21.3	0.08	12.0	0.41	10.8	3.53	72.1
1882-1904	2.05	8.2	1.29	15.3	0.95	26.3	0.92	16.4	1.22	16.9	6.43	83.1

The total amount of rainfall for the five months was 4.99 inches, or 1.44 inches less than the average for the twenty-three years. The precipitation of snow, however, was 80.3 inches, which was 9.2 inches more than the average, but 26.6 inches more than in the year 1903, when the precipitation of snow was exceedingly light.

The six months, April-September, however, comprise what is regarded as the growing season for most crops, and the following table gives the rainfall of these months for the last ten years, and also the average for the twenty-three years, 1882-1904:

Months.	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1882-1904.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
April	2.22	2.32	2.12	2.26	1.44	1.10	1.45	2.52	1.26	1.49	1.65
May	3.56	1.82	2.44	3.67	2.03	3.43	2.43	3.38	2.10	2.36	2.84
June	3.20	3.83	3.92	2.14	2.83	2.46	2.83	2.83	2.39	1.37	2.89
July	3.50	4.09	5.49	3.90	3.96	2.78	1.11	5.36	2.79	2.02	2.91
August	3.76	3.77	2.02	2.78	2.15	0.81	2.64	2.62	2.86	2.81	2.60
September	3.24	2.21	3.53	2.78	2.73	3.72	2.94	0.83	4.47	2.67	2.67
Total for six months	19.28	18.04	19.52	17.53	15.14	14.30	13.40	17.54	15.87	12.72	15.56

The rainfall for the six growing months was 19.28 inches, or 3.72 inches more than the average of 1882-1904, every month comprising the table exceeding its own average for the twenty-three years. But while the total rainfall for the growing season was greater in 1904 than in the preceding year, no month equalled the precipitation of either June, July or August in 1903.

SUNSHINE. In the following table the averages of sunshine are, as usual, derived from the records of the weather stations at Woodstock, Toronto, Lindsay, Kingston, and Ottawa:

Months.	Sun above horizon	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1882-1904
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
January	285.7	71.0	54.4	84.1	59.7	77.1	90.8	76.2	70.4	52.3	73.0	74.4
February	291.4	109.0	90.9	127.7	115.7	109.8	112.8	69.3	93.7	104.0	110.2	100.3
March	369.9	109.2	99.8	138.8	96.9	161.4	133.2	157.5	148.3	188.1	179.6	143.3
April	406.4	124.6	184.7	144.1	154.5	214.0	223.2	230.2	174.2	180.3	195.1	188.3
May	461.1	211.4	284.1	207.8	177.3	247.9	210.9	196.3	196.9	262.1	252.1	218.5
June	465.7	228.9	196.0	199.3	366.5	305.3	278.2	237.1	212.8	302.1	286.3	244.6
July	470.9	237.3	261.2	241.5	268.2	266.3	302.2	307.8	258.7	237.8	232.4	265.5
August	434.5	256.6	180.6	245.2	208.0	271.4	262.1	225.2	262.4	262.6	228.0	239.6
September	376.3	172.8	203.7	149.3	199.7	190.0	164.4	202.4	237.1	168.0	194.2	188.1
October	340.2	124.4	152.4	119.1	163.0	164.0	141.7	118.2	261.0	135.0	149.0	134.9
November	286.9	100.1	114.0	76.6	80.3	82.4	78.6	89.0	60.8	69.8	79.3	77.3
December	274.3	60.9	59.5	71.0	62.9	46.6	60.2	56.6	40.6	80.8	57.1	59.1
Total for the year	4463.3	1806.2	1881.3	1799.5	1852.7	2136.2	2058.3	1965.9	1923.9	2045.4	2036.3	1933.9
Total for 6 months, April-Sept.	2614.9	1231.6	1310.3	1187.2	1274.2	1494.9	1441.0	1399.0	1349.1	1412.9	1388.1	1344.6

There were 1806.2 hours of sunshine registered in the twelve months, or 127.7 hours less than the average for 1882-1904; while in the six months, April-September, there were 1231.6 hours of sunshine, or 113 hours less than the average of the same period for the twenty-three years. There is only one year of the table (1902) showing a smaller record of sunshine for either of the periods. February, August, November, and December were the only months that exceeded their respective averages of sunshine. March and April were, relatively, most deficient in sunshine.

VEGETATION.

Growth in both field and forest was late in starting, but the first week or ten days of May were so warm and favorable that vegetation went forward with a rush, and when correspondents reported on the 16th of that month, pastures were almost as far on as usual. In nearly every section cattle were on the grass at that date, and trees and shrubs were springing into leaf.

Spring Seeding. April was so cold and forbidding from an agricultural standpoint that but little seed was put into the ground in that month. The early part of May, however, was so warm and inviting that sowing operations were rapidly pushed forward without a break, and nearly the normal acreage was in seed as correspondents wrote on the 16th of that month. In many sections sowing was then completed, but in other quarters there was still considerable to do in this line. The plowing under and re-seeding of fall wheat also delayed matters, and added to the work of seeding. Spring grains as a rule found a good seed bed, although a few correspondents, more especially in some of the West Midland counties, complained of the ground being rather hard. However, a good tone generally pervaded the bulk of the reports regarding spring operations.

THE GRAIN CROPS.

Fall Wheat. The following reference to the fall wheat planted in 1903 was contained in the November Bulletin of that year: "There has been a greatly increased area of wheat sown this fall, more particularly in the Lake Erie district and other localities where the Hessian fly did so much injury during the previous three or four years. The seed-bed was generally reported as being in first-class condition, which gave the crop a good start, and as correspondents wrote at the end of October, the young wheat was presenting a fine appearance in most places, although here and there some fields were showing the need of rain. While sowing ranged from the 20th August to the end of the first week of October, the bulk of the crop was put in somewhat later than usual. Some injury from the Hessian fly was reported, but not so much as in the previous three or four years. Forty varieties of fall wheat are mentioned as being sown, Dawson's Golden Chaff being the most popular and Red Clawson coming next."

The May Bulletin had the following regarding fall wheat: "Although the crop entered the winter so full of promise, it emerged in a very bad condition indeed, the season having proved to be one of the most disastrous for fall wheat in its history, the loss by winter-killing ranging from 20 to 90 per cent. Of course all the poor wheat land will not be plowed up, as much of it was seeded down with grass; nevertheless it has been many years since so large an acreage of fall wheat was plowed under in the spring. A considerable area of fall wheat will be resown with barley and oats, or other spring grains, for feed. The chief cause of hurt to the crop was the formation of ice on level and low-lying places, although a number of correspondents complain of snow smothering. On the slopes of rolling land, and on fields well protected by timber, a few good yields may be recorded, but when the snow disappeared, the fall wheat fields on the whole were the most patchy looking that have been seen in the Province for some years. Very little injury from insect pests has been reported this spring. Correspondents have been almost silent regarding the Hessian fly, while a few have made mention of the presence of the wire-worm. While winter-killing was more or less severe wherever fall wheat has been grown, the greatest damage to the crop was sustained in the Lake Erie counties. Next in order of injury reported come the Lake Huron and West Middlesex groups, the Georgian Bay and Lake Ontario districts following with a somewhat lighter, but still serious, proportion of loss. The bright spot in the outlook for fall wheat is the fact that since the beginning of May the weather has been

most favorable for the recuperation of the crop, and the latest reports to hand indicate that many of the fields are making an encouraging recovery."

The August reports of correspondents were thus summarized: "The season this year is considered to be from one to two weeks later than usual, for while in some quarters fall wheat harvesting began as early as July 20th, considerable of the crop remained to be cut on the 1st of August. The grain, which in 1902 and in 1903 gave most generous yields, will this year, compared with its own average, be relatively the poorest of the cereal crops, taking the Province at large; for while in some localities a good return is reported, in other sections the crop has been so great a failure as to give back no more than the quantity of seed sown. A good deal of fall wheat land was plowed up, and much was resown with barley which has done well. Most of the damage done during the winter was caused by ice forming on level places, and by smothering from snow. The crop appears to have sustained but little damage from Hessian fly or other insect pests, most of the more recent injury to it resulting from rust and rain. Fall wheat this year had its worst experience in the Lake Erie district, where many fields came out of the winter almost bare, the yields from these counties ranging from one bushel an acre up to twenty, with an average one of the lowest on record. In the Lake Huron and West Midland counties a rather better condition of things prevailed, but their average yields will be small compared with those of the two years immediately preceding. In the Georgian Bay group, and in the western half of the Province, the yield of fall wheat will be fairly well up to the standard, although suffering somewhat from rust. Very little is said by correspondents as to the quality of the grain, a fact which carries its own comment."

The following appeared in the November Bulletin: Fall wheat is not only smaller than usual in the yield per acre, but it is also rather light in weight, running sometimes as much as three pounds per bushel below the standard, much of the grain having become shrunken on account of rust. In some localities, however, the crop turned out well in both yield and quality. It suffered much less than in more recent years from Hessian fly and other insects.

The New Fall Wheat. The bulletin issued in November, 1904, had the following: "The acreage recently sown to fall wheat appears to be larger than that of the preceding year. Owing to the lateness of harvesting operations most of the new fall wheat was got in a week or two later than usual. As a rule the ground was in good condition to receive the seed, and a good catch was made. The cool weather in the latter part of the fall, however, retarded growth somewhat, and many regard the crop as being short in the top, although otherwise looking vigorous and promising. But little injury from Hessian fly was complained of compared with the ravages of this pest during the past three or four years. A few reports were received as to the presence of wire-worm. Correspondents mention forty-three different varieties of fall wheat as being sown. Dawson's Golden Chaff is the favorite, with Red Clawson coming a fair second."

Spring Wheat. This crop was not so far advanced as usual when correspondents reported on the 1st of August, and cutting was not expected to begin until the 10th or 20th of the month, according to locality. Rust was then threatening in some quarters, but aside from this the crop was in excellent condition as regards both straw and grain, and the yield was expected to be well above the average. There was little or no complaint of insect pests.

In commenting upon the condition of spring wheat the November bulletin said: "Rust also attacked this crop, but did not do so much injury as in the case of fall wheat. Goose wheat escaped the rust, however, and turned out to be an excellent sample. This crop furnished plenty of good straw."

Barley. August reports concerning this crop were to the following effect: "The cutting of barley was general in the last week of July, although much of the crop remained to be harvested after that period. Barley has become one of our most popular

grain crops, being largely fed to live stock in lieu of peas, which have become, as a correspondent aptly describes it, 'bug-ridden'; this being the case, the matter of color is not of so much importance as formerly, when the bulk of our barley was used for malting purposes. However, in respect of color, the crop has turned out well. The yields generally are well up to or above the average, and the heavy returns much outnumbers the light ones. The chief injury to the crop is said to have resulted from 'lodging' and rust, but even these drawbacks have not been serious."

The November bulletin had the following regarding barley: "This turned out to be one of the most successful crops of the year. The yield per acre was considerably over the average; and although the grain was in many cases described as being discolored by rain, it was plump and of first-class feeding value."

Oats. The following is a summary of the August returns: "Some big yields of oats have been reported, and only a few poor ones, and the probabilities are that the general result will be one of the most satisfactory in the history of this important crop. The straw is described as being rather short, however, and a few correspondents were fearing damage from rust. Some also alluded to the likelihood of 'lodging,' owing to the weight of the heads. Odd mention only was made of smut, and practically nothing was said of hurt from insects. The harvesting of this crop was not expected to be general before the second week of August."

The references to oats in the November bulletin were most encouraging: "This crop was also a splendid one, the average yield being large, and the general quality of the grain being good. Smut and rust were complained of in some localities, but taking it altogether, the yield and quality may be considered as most gratifying."

Peas. The August bulletin said of peas: "This crop was in various stages of advancement as correspondents sent in returns on the 1st of the month, some fields being almost ready for pulling, others were just beginning to pod, while still other fields were reported as being yet in blossom. The bulk of the crop will probably be harvested between the 15th of August and the end of the month. Owing to ravages of the 'bug' during the last few years, only a small acreage of peas have been planted this season. While the presence of this pest is reported in many sections of the Province, it does not appear to be so general as in recent years, although it is perhaps rather early to speak with accuracy on this point. The crop did best on high, dry land, but suffered more or less on low-lying fields, owing to the frequent rains. Present prospects are for a yield rather above the average."

The following appeared in the November bulletin: "The round or common field pea has not been widely sown during the past three or four years, owing to the ravages of the weevil or 'bug.' The yield and general quality or peas this season, however, will do much to restore confidence in the growing of the crop. The injury from weevil was comparatively slight, and a larger acreage of peas may be looked for next year."

Beans. Like the other spring crops, beans were much later in growth than usual, being yet in the blossoming stage, or else just beginning to pod, on the 1st of August. The crop was then looking very promising, and although a number of the correspondents thought it then too early in the season to make a statement as to the return per acre, the general opinion was expressed that the yield would be considerably above the average.

The November bulletin contained the folllowing: "Notwithstanding the late start, beans promised well when the August returns were received; but since that time some of the crop was more or less hurt by frost. The yield and quality of the crop are variously described as good, medium, and poor."

Rye. The following account of the rye crop appeared in the August bulletin: "This crop, like fall wheat, was badly winter-killed, and the yield per acre will be below the average. Where the crop survived the winter, however, it came along in fair condition as to quality. Much of the rye is sown for green feed, and the acreage kept for grain is a very limited one."

According to the November bulletin, both the yield and quality of rye could be put down as medium.

Buckwheat. Comparatively little buckwheat is grown for grain in this Province. Correspondents spoke of it as being a fair crop of good quality this season, although injured somewhat by frost.

Corn. The August bulletin said: "References to the poor quality of seed corn are so frequent as to demand attention, more especially as complaints of this kind have been more or less common for the last two years. The wet and cold weather prevailing at the time of planting also caused some rotting of the seed on low fields, the result of these various drawbacks being that corn received a bad start generally, and parts of some fields had to be resown with buckwheat or with oats and peas for green feed. Some correspondents speak of the crop as promising, but most of the returns made are more or less unfavorable, more especially as the stage of growth was very backward for the season."

November returns bore out the statement made in the August bulletin regarding the bad start given to corn, owing to the wet and cold weather prevailing at the time of planting. Complaints then made about poor seed were also reiterated, and a rather thin stand of corn was reported. "Much of the crop was caught by the frost in a more or less immature condition," said the November bulletin, "with the result that there will be a good deal of soft corn and many imperfect developed ears for husking. Corn for the silo is described by some as being of inferior quality, while many others claim that it will be of good, fair quality. Taken altogether, however, it has been a decidedly poor year for corn."

HAY AND CLOVER.

The May bulletin said: "The condition of clover (as reported on by correspondents on the 16th of May) may be thus briefly described: In the eastern half of the Province the crop is from fair to good, and it some sections very good: in the western half it is from good to very poor. The most favorable reports come from the counties stretching from Lincoln and Welland, along the Lake Erie front, to Lambton and Huron, in many parts of which the crop is an absolute failure. The greater part of the injury to clover was done by ice remaining for a length of time on flat or low-lying fields. Most of the loss has occurred with old fields, the more freshly seeded fields almost invariably turning out well. The rains prevailing about the middle of May have given the crop a good start for the season."

In describing hay and clover the August bulletin had the following: "Taking the Province as a whole, this crop may be briefly described as a fairly large one, and it has been welll saved in most cases. Notwithstanding the great injury to clover in many parts of the Province during the winter by ice forming on low-lying fields, a good recovery was made, owing to the favorable growng weather of May and June, and timothy has done even better than clover relatively. Some of the early hay was caught by rain, but the bulk of the crop was housed in excellent condition. Hay harvesting covered nearly all of July, cutting not being rushed as much as usual owing to the lateness of the grain crops. The poorest average yields were reported from the Lake Erie counties, where much damage had been done by winter-killing, and many fields of clover had to be plowed up. A few correspondents complain of midge, but injury to the crop by this or any other insect was not general. New meadows did much better than old ones, and spring seeding is turning out well."

Clover Seed. November reports concerning clover seed were, on the whole, unfavorable. The plant suffered more or less from winter-killing, and this year's second growth ripened slowly owing to wet and cold weather, the result being that much of it was caught by early frost. The midge, also, was very active in nearly every part of the Province. Alsike seems to have fared even worse this season than red clover.

FIELD ROOTS.

Potatoes. The following was the report on potatoes which appeared in the August bulletin: "While some correspondents speak of the seed rotting owing to wet weather in the early part of the season, the bulk of the reports are to the effect that the average yield will be a good one. Complaints were made in some quarters of more injury than usual by the bug. A few cases of blight were mentioned, but on the first of August the outlook of the crop was a most encouraging one both for product and quality."

The November bulletin had the following regarding the crop: "In some localities there was from a fair to a large yield of potatoes, but considerable rot has appeared, more especially where the crop was grown on heavy soils or on low-lying land. The extent of the loss from rot is variously estimated at from 20 to 50 per cent. Several correspondents speak favorably of spraying Bordeaux mixture as a preventive of blight or rot. A number also refer to the excellent cooking quality of this year's potatoes."

The August bulletin contained the following paragraph concerning roots: "Spring was not favorable to the getting or land into good shape for the sowing of roots, and the wet weather continued so far into the season that much of the seed had to be put in late. Consequently all classes of roots were backward on the first of August, although then growing vigorously; and while many fields were somewhat thin in the row others were giving fair promise. No injury was reported from insect pests. The continued scarcity of labor has been a serious drawback to keeping root crops in best condition."

Carrots. The November bulletin stated that carrots are not extensively grown, compared with other roots, but that where raised the crop was a good one, and was stored in good order.

Mangels. These roots, according to the November returns, were considered as rather small in size, but otherwise of good quality. In most cases they had been well housed, although a few complaints were made of injury from frost.

Turnips. This crop was thus alluded to in the November bulletin: "Notwithstanding the late seeding, turnips made good growth, and in most localities where grown are regarded as being of good yield and quality. In some quarters they suffered from the aphis or louse, and a little rot was reported where grown on low land. A portion of the crop was still in the ground on the 1st of November, owing to the scarcity of farm labor."

Sugar Beets. August reports were to the effect that the sugar beet fields of western Ontario were then in fine condition, and were showing decided improvement in appearance over former years. November returns were also favorable. Where grown, sugar beets had turned out well. The weather, also, was favorable at the time of pulling.

FRUIT AND FRUIT TREES.

The following report regarding the orchard appeared in the May bulletin: "The severity of the winter told somewhat against fruit trees, more especially peaches, plums, and cherries, but the injury from frost was not so serious as was at one time expected. Pears and apples suffered least from the cold weather, but these, and indeed nearly all classes of young fruit trees, sustained most injury from girdling by mice, reports regarding the presence in orchards of these vermin coming from nearly every county in western Ontario, and from several counties in the east. Complaints have also been received concerning the San Jose Scale, one correspondent giving serious warning of the inevitable evil results attending neglect of attention to this enemy. Fruit trees are about ten days later than usual in blossoming, and this prevents correspondents from speaking with assurance as to the prospects of fruit, although some very hopeful re-

ports have been received. Raspberries and strawberries are described as being badly winter-killed in places, and will hardly be up to the mark."

The August bulletin said: "Harvest and fall apples will give an average yield in most orchards, but the winter sorts, more especially Spys and Baldwins, will be comparatively scarce. Pears will range from poor to good in yield, but peaches will be light owing to the severe winter, which killed many trees and destroyed fruit buds on some of the survivors. Cherries varied greatly in yield, but on the whole the crop was not nearly up to the average of previous years. Plums suffered nearly as much as peaches from winter-killing, and will yield poorly. Grapes at the present time give promise of being a good crop; although there is a danger of some late varieties being caught by frost owing to the season being quite backward. Strawberries were not so large a crop as usual, but good reports have been received regarding raspberries and other small fruits. Complaints of injury to fruit from insect pests, spot, etc., were much less than in other years."

The following appeared in the November bulletin: "There was a large yield of apples of the fall or non-shipping varieties. The demand for this class of fruit was more than met, and in several localities in different parts of the Province thousands of bushels of these apples remained unpicked, or were fed to live stock. The standard winter or shipping apples, however, are rather scarce. Codling moth and scab were complained of by some correspondents, but not to so great an extent as usual. A considerable number of apple trees were killed or weakened by the severe winter, Spys, Baldwins, and one or two other valuable sorts being named in this regard. Pears gave a fair yield, but other orchard fruits were not plentiful, plum and peach trees having suffered even more than apples from winter killing. Of the small fruits, raspberries yielded most abundantly. Grapes were caught by the frost in a few sections and some of the clusters failed to ripen."

MISCELLANEOUS.

Rape. This crop is a popular one with sheep-raisers, who finish off lambs by turning them out on the rape fields in the fall. Swine and beef cattle are also fed upon rape, but it is not recommended as a food for dairy cows. There were 49,219 acres in rape in 1904, or about the same area as in the year before.

Tobacco. According to the August bulletin, only a few correspondents made mention of tobacco as a growing crop. The plant was reported as doing well, although rather late in growth, owing to the wet and generally backward spring.

The November reports regarding this crop were thus summarized in the bulletin issued in that month: "Several correspondents speak well of the tobacco crop, both as to the quality of the leaf and the character of the curing; but others assert that the lateness of the season at planting rendered it impossible to raise a first-class brand of leaf. Some of the crop got nipped by the frost, but as regards both yield per acre and quality the return will be about an average."

Flax. The area devoted to flax was 6,313, which is a falling off of 659 acres compared with the acreage of the preceding year. The raising of flax for commercial purposes is confined mainly to the western portion of the Province.

Hops. Very little was said by correspondents regarding hops. The area was 2,252 acres, which shows a shrinkage of 262 acres compared with the figures given for 1903.

Threshing and Marketing. Threshing was well advanced generally, and completed in many quarters, when correspondents wrote on the 3rd of November. Some reported that considerable quantities of wheat, barley and oats had been marketed, while others stated that owing to the pressure of fall work only a comparatively small quantity of grain had been sold. However, it is becoming more and more the practice to feed barley and other coarse grains to live stock on the farm.

Fall Plowing. The November bulletin said: "Taking a lesson from the experience of last fall, when the sudden approach of winter prevented much of the plowing being done that had been arranged for, farmers are this year a little more forward in this line of farm work. On the 1st of November fall plowing was considered to be well advanced compared with the previous year, most of the stubble and root land having been turned under, although there was a fair amount of sod yet to plow. The weather toward the close of the season was quite open and well suited for the work, but the ground was rather dry and hard for good plowing. The scarcity of labor, also, has been hindering plowing."

Farm Improvements. The following reference to farm improvements appeared in the November bulletin: "Fair progress has been made in underdraining, and more work of this character would have been done but for the lack of skilled labor. Wire fences are rapidly taking the place of the old wooden ones, the enhanced price of the wood of the old fences in some cases paying for the cost of new ones. It is also pointed out in this connection that fields are being made larger than was formerly the rule. Improvements in farm buildings continue on a generous scale. A large number of new houses have been erected, chiefly of brick, and many barns with commodious basements have also been built. A popular line of improvement is the raising of old barns in order to allow the building of stone, brick or concrete foundations beneath them for stables, etc. Wooden floors in stables are also being replaced by cement. Several correspondents speak of the difficulty of finding enough mechanics to do the work required on farm buildings this season."

LIVE STOCK AND THE DAIRY.

The spring bulletin, issued in May, contained the following: "Considering the severity of the winter, live stock have come through in a fair condition. A mild form of distemper made its appearance among horses in many parts of the Province, and what is known as 'Broncho itch' is reported from a couple of points in the county of Prescott; but the general health of horses has been good, and this class of live stock are in demand. The sudden change to the activity of the exceedingly warm first week of May, after the prolonged confinement of winter, told against many working animals, and some valuable horses succumbed to the strain. Cattle looked rather thin in the spring, but they appear to be in good health. The greatest loss in this class of stock has been among early calves. Sheep are not raised to the same extent as formerly. They are reported in fair condition, although lambing has not been altogether satisfactory. Swine have done well considering the trying winter. From various parts of the Province reports have been received of some of them becoming crippled on account of the cold and dampness prevailing, and many young pigs have died, but the great bulk of swine have turned out well. In most sections there was a sufficient supply of fodder for all classes of stock; although, of course, a few farmers here and there were caught short owing to the unusual length and severity of the winter."

The August bulletin stated: "Midsummer found pastures in a splendid state, and live stock were also reported to be in excellent condition, although in some localities they were much troubled by flies. The prospects are good for an abundance of fall and winter supplies for farm animals. The flow of milk has been large, but prices for dairy products have not been encouraging, more especially in the case of cheese. The consequence is that calves have been getting much more milk than in more recent years, and a correspondent remarks that this will be a good thing for both the calves and the farmers."

Pastures and live stock were thus described in the November bulletin: "Fall pastures as a rule have been in good condition, the more favorable reports coming from the eastern half of the Province. Practically no disease has been reported amongst

live stock. Cattle were generally on grass in the last week of October, but the keen nights were constraining many farmers to put their herds into the stable. A number of stall-fed cattle were being prepared for the Christmas market, but fattening generally was only just beginning as correspondents wrote. Cattle will go into winter quarters rather on the lean side, but healthy and vigorous. Sheep are not so commonly kept as in former years, but lambs were reported as being thrifty and fattening early. Hogs are being fitted for the market 'all the year round,' to quote a favorite expression of correspondents. They are being raised in large numbers, are in fine condition generally, and are conforming more and more to the desired bacon type. Silos are still increasing in number, but much of the corn is not good for ensilage this season, being either immature or frost-bitten. There will be a fair amount of fodder in most quarters, the shortage of corn and straw being made up by the unusually good yield of hay."

Poultry. The spring and summer were rather wet and cold for the best results in poultry raising, but more attention is now being paid to the care of this class of live stock, and the good prices prevailing for chickens and eggs made the season a profitable one for those who practise modern methods. Disease among hens, chiefly of a roupy character, was reported in two or three quarters in western Ontario, but these outbreaks were of a local nature. Turkeys will be comparatively scarce, owing to the mortality among young birds in the spring. They are regarded by most correspondents as a profitable variety of fowl to raise.

Values per Head. The statistics of live stock will be found on pages 35-41. The following table gives the average value per head of stock on hand for the past ten years:

Classes of live stock.	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895
	$	$	$	$	$	$	$	$	$	$
Horses :										
Working horses	111	103	93	85	79	72	65	61	63	66
Breeding mares	114	106	95	87	81	74	68	64	64	68
Colts	73	67	62	57	53	49	44	41	41	44
Stallions	406	388	373	346	368	332	303	283	263	265
Cattle :										
Working oxen	44	45	42	41	42	46	45	42	43	45
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Milch cows	34 70	34 15	32 96	31 74	31 01	30 31	28 28	26 13	27 60	29 74
Store cattle	32 10	31 71	30 02	29 25	29 38	29 27	26 49	23 89	24 01	25 36
Other cattle	16 06	15 82	15 01	14 14	13 67	13 09	11 91	10 62	11 19	12 14
Sheep :										
Over one year	5 37	5 36	5 40	5 31	5 17	5 01	4 76	4 37	4 41	4 62
Under one year	3 34	3 35	3 37	3 37	3 31	3 15	2 91	2 62	2 65	2 85
Swine :										
Over one year	15 88	16 28	16 00	14 34	12 09	12 23	12 63	11 40	11 13	11 87
Under one year	4 90	5 07	5 15	4 81	4 24	3 92	3 91	3 67	3 70	3 98
Poultry :	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
Turkeys	76	69	66	65	65	65	63	64	65	65
Geese	65	61	61	60	59	57	55	56	56	56
Ducks	36	33	33	31	30	29	.....	.....	.....	.....
Other fowls	28	27	26	24	23	22	22	21	22	22

Bees and Honey. The August bulletin had the following regarding apiary conditions: "The winter was a most trying one for bees; they came out weak, and there was considerable spring dwindling. Swarming was late, and was hardly so general

as in recent years. Clover was in fair supply, but there was not much linden. Extracting was rather backward, owing to the season being a late one. The average yield per colony, spring count, will hardly reach 40 pounds."

The following appeared in the November bulletin: "The severe winter, the late spring, and the comparatively cool and wet nectar season, combined to limit honey production. Colonies were rather weak in the spring, and required considerable building up. The average yield of honey per colony, spring count, will be about 30 pounds, or some ten pounds less than was looked for in the August bulletin. There was very little basswood honey. Correspondents report practically no disease among bees, and they will go into winter quarters in fair condition."

The Dairy. There was a good, steady flow of milk during the summer and fall, and dairy products were turned out in large quantities. Both butter and cheese were low in price during the summer, but prices for the former article improved in the fall, and a relatively larger increase in the quantity of butter made occurred during the last month or two of the season. The quality of home made butter is said to be steadily improving, some correspondents attributing this fact to the now almost general use of cream separators on the farms. The cheese industry is still the leading branch of dairying, the factory system having attracted the support of at least 60,000 patrons.

Creameries. The following comparative table gives the statistics of the creameries operated in Ontario for the ten years 1895-1904, showing the quantity and value of butter made, the average number of patrons, the average price of butter per pound, and the amount paid to patrons for milk or cream supplied:

Year.	No. of creameries in operation.	Butter made.		Average No. of patrons.	Average price of butter per pound.	Amount paid to patrons for milk or cream delivered.
		Quantity.	Value.			
		lb.	$		cts.	$
1904	248	9,625,021	1,785,911	18,330	18.55	1,497,160
1903	265	10,812,126	2,096,593	19,602	19.39	1,767,595
1902	282	11,082,078	2,181,409	21,672	19.68	1,887,026
1901	286	9,047,260	1,798,264	19,896	19.88	1,548,576
1900	308	9,041,468	1,819,290	21,809	20.12	1,589,291
1899	323	9,113,964	1,746,362	22,040	19.16	1,448,411
1898	282	9,008,992	1,632,234	22,741	18.12	1,294,220
1897	214	7,508,265	1,403,609	18,909	18.21	1,139,463
1896	170	6,033,241	1,101,232	12,245	18.25	.....
1895	135	4,555,708	868,382	9,664	19.07	.....

The number of creameries include the skimming stations. Several of the creameries made no butter in 1904, but disposed of the cream for making ice cream. The make in winter creameries does not average 12,000 pounds each, and an unusually large number made none at all in the past season.

Cheese Factories. The number of cheese factories reported in operation in 1904 was 1,441. The output of cheese was 154,879,428 pounds as compared with 165,990,553 in 1903, and 146,805,776 in 1902. In addition to the decrease in cheese made the average price realized fell from 10.41 cents in 1903 to 8.33 cents in 1904. The season's output, therefore, was only worth $12,908,118 as against $17,203,233 in 1903. The amount paid to 57,485 patrons was $10,904,159, or 66.5 cents per 100 pounds of milk against 88.7 in 1903. From this amount, however, must be deducted the cost of collection or delivery to the factory.

LABOR AND WAGES.

The question of the sufficiency of labor, both as to extent and quality, has reached an acute stage in its relation to Ontario farms. The following selections from our crop bulletins summarize the situation:—

The May bulletin said: "The majority of correspondents complain of the scarcity of farm laborers, more especially of those with a fair degree of experience and capability. City and town life, and the development of the Northwest, attract many of the more ambitious young men from the country, and it is difficult to replace them with good farm hands. In some parts of the Province the pressure of spring work has been so strong that farmers' wives and daughters have worked in the fields assisting in getting in the crops. On account of the paucity of skilled farm labor many farmers are 'seeding down' more land rather than to continue growing so much grain and hoed crops. Dairymen are among those who complain strongly about the scarcity of farm help, as is is hard to get adequate assistance in milking. Domestic servants on the farm are, if possible, more difficult to procure than ever."

The subject was thus dealt with in the August bulletin: "There is a decided scarcity of farm labor, although the lack of help has not been felt so keenly as in the two or three years immediately preceding. The situation has been slightly relieved by the arrival of more British immigrants, but skilled agricultural laborers are yet very hard to pocure. Farmers are having recourse to improved labor-saving machinery, and are endeavoring in this way to keep the work more within their own families. Wages are fully as high, or higher, than formerly."

The November bulletin had the following: "Skilled farm laborers are reported as scarce, and wages for this class of workers keep comparatively high. Most correspondents are of opinion that rates will not fall, although a few hold that the lowering of wages by lumbermen will ultimately cause a reduction in the rates paid to workers on the farm. Several correspondents insist that wages cannot rise, as owners of farms cannot afford to pay any more than is now being given. The use of improved machinery, and the interchange of work by neighbors, are the chief suggestions made to meet the emergencies caused by the shortness of labor. Some correspondents seriously advocate the importation of Chinese or Japs to assist on the farm. Some of those reporting refer regretfully, if not complainingly, to the fact that many of our best trained Canadian helpers are going to the Northwest, and that their places are being taken by inferior help from abroad."

The following table gives the average rate of wages paid farm laborers by the year and by the month, with and without board, for ten years, together with the average for twenty-two years; also the monthly wages paid domestic servants on the farm:

Farm Laborers.	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895
Per year in yearly engagements:	$	$	$	$	$	$	$	$	$	$
With board.....	190	183	165	165	155	149	148	144	144	150
Without board.....	291	274	268	263	248	243	246	236	243	246
Per month for working season:	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
With board.....	21 49	19 44	18 52	17 78	16 57	15 38	15 31	14 29	14 57	15 38
Without board.....	31 02	28 04	27 51	27 05	25 73	24 93	25 44	24 47	24 11	25 45
Domestic servants per month	8 07	7 84	157	6 91	6 65	6 19	6 09	5 97	6 11	6 07

There is an increase in the rate of wages paid to every class of workers on the farm.

TEMPERATURES OF 1904.

TABLE I.—Showing for each month the highest, lowest, mean highest, mean lowest, and mean temperature at the principal stations in Ontario in 1904; also the annual mean for each station.

Months.		Saugeen.	Birnam.	London.	Woodstock.	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockcliffe.
		°	°	°	°	°	°	°	°	°	°
January	Highest	40.0	36.6	38.0	39.0	45.0	40.2	39.8	35.0	30.0	30.0
	Lowest	−23.7	−16.2	−22.0	−20.0	−16.0	−15.1	−26.9	−34.0	−30.0	−45.0
	Mean highest	23.9	20.0	23.0	21.6	24.7	24.3	18.8	19.7	12.6	11.9
	Mean lowest	4.8	7.6	6.5	3.6	8.3	7.6	− 2.7	− 5.8	− 2.8	−15.1
	Monthly mean	14.4	13.8	14.8	13.8	16.8	16.0	8.7	6.9	4.9	− 1.6
February	Highest	43.8	42.8	42.0	41.5	45.0	42.0	36.8	35.0	38.0	38.0
	Lowest	−20.6	−15.8	−16.8	−15.0	− 9.0	−10.5	−21.2	−28.5	−24.0	−44.0
	Mean highest	19.4	17.5	21.4	19.9	23.7	22.4	17.0	16.9	15.1	14.0
	Mean lowest	− 2.2	4.7	1.9	0.2	5.2	4.3	− 4.6	− 7.7	− 3.0	−15.5
	Monthly mean	8.6	11.1	11.7	11.5	14.8	13.2	7.1	4.2	6.1	− 0.4
March	Highest	48.8	52.3	52.0	48.0	60.0	50.7	45.2	45.0	44.0	50.0
	Lowest	4.0	7.0	1.5	3.0	6.0	4.2	− 9.0	−11.0	−12.0	−31.0
	Mean highest	34.7	33.1	36.3	34.2	37.7	35.4	32.2	31.8	31.9	32.5
	Mean lowest	17.6	23.0	22.1	19.1	23.8	22.0	15.0	14.6	16.1	7.2
	Monthly mean	26.2	28.0	29.2	27.7	30.3	28.8	24.8	23.8	24.0	19.9
April	Highest	65.8	69.1	65.0	62.5	62.0	58.3	62.6	63.0	65.0	65.0
	Lowest	15.0	14.2	18.0	17.0	20.0	19.2	16.5	12.0	19.0	0.0
	Mean highest	45.6	44.0	47.3	45.1	45.9	47.0	46.6	44.4	46.1	47.1
	Mean lowest	28.6	31.1	30.5	29.8	30.9	31.4	29.4	26.3	31.4	23.8
	Monthly mean	37.1	37.5	38.9	37.4	38.2	38.4	37.4	35.4	38.8	35.5
May	Highest	84.0	84.8	85.0	83.0	86.0	78.6	83.2	81.2	82.0	86.0
	Lowest	29.1	33.8	33.0	32.0	35.0	33.7	27.8	26.0	41.0	24.0
	Mean highest	64.9	66.1	68.0	66.6	66.8	65.0	69.7	67.5	70.6	69.8
	Mean lowest	43.1	47.6	45.7	44.8	46.1	45.6	44.2	41.8	49.1	40.8
	Monthly mean	54.0	56.8	56.9	56.3	55.7	55.0	56.3	54.9	59.9	55.3
June	Highest	86.0	86.0	87.5	83.2	89.0	83.6	86.0	85.0	86.0	89.0
	Lowest	38.6	36.0	38.5	41.0	41.0	42.8	42.9	36.0	49.0	27.0
	Mean highest	71.6	72.6	75.4	73.7	74.0	73.2	74.8	74.4	75.1	75.9
	Mean lowest	51.0	54.6	53.5	52.5	51.5	53.0	52.9	50.6	55.5	48.7
	Monthly mean	61.3	63.6	64.4	63.9	63.1	63.0	63.2	63.3	65.3	62.3
July	Highest	88.0	90.5	91.5	89.0	97.0	93.0	89.9	88.0	94.0	97.0
	Lowest	40.0	41.0	40.5	42.0	46.0	46.1	42.8	37.0	45.0	38.0
	Mean highest	74.3	75.6	77.8	76 0	79.4	77.5	77.3	76.7	77.7	76.1
	Mean lowest	55.3	58.0	56.7	55.1	58.7	57.4	55.7	54.5	58.9	52.8
	Monthly mean	64.8	65.1	67.2	65.6	68.6	67.1	65.4	65.6	68.3	64.5
August	Highest	83.2	80.2	82.0	80.0	86.0	84.0	82.9	82.0	85.0	81.0
	Lowest	41.0	45.2	38.5	41.0	43.0	45.0	41.0	36.0	46.0	35.9
	Mean highest	71.2	72.8	75.2	73.7	77.5	75.3	75.4	73.2	74.1	72.6
	Mean lowest	53.8	54.8	50.9	51.8	55.5	54.3	51.3	50.9	55.0	48.3
	Monthly mean	62.5	63.8	63.0	63.8	66.5	64.1	62.1	62.3	64.7	60.4
September	Highest	83.0	85.7	83.5	81.0	86.0	79.5	79.5	83.0	77.0	83.0
	Lowest	37.0	28.6	26.0	27.0	32.0	33.8	29.9	28.0	31.0	27.0
	Mean highest	66.8	67.6	69.2	67.7	70.1	67.2	66.4	64.8	63.0	63.0
	Mean lowest	49.2	52.3	49.4	47.7	51.8	50.2	46.4	45.4	46.6	41.9
	Monthly mean	58.0	59.9	59.3	58.5	60.9	58.1	55.4	54.8	54.8	52.4
October	Highest	72.2	74.0	74.0	73.0	67.0	71.0	71.6	70.0	70.0	68.0
	Lowest	22.1	26.0	19.0	20.0	22.0	23.0	20.0	19.0	21.0	18.0
	Mean highest	54.5	54.5	55.5	53.7	58.3	54.2	52.5	51.4	51.6	51.1
	Mean lowest	38.5	40.0	36.3	35.1	37.9	37.8	34.7	34.8	36.7	32.6
	Monthly mean	46.5	47.2	45.9	45.8	47.4	45.4	42.6	43.0	44.3	41.9
November	Highest	58.6	59.8	60.0	60.0	65.0	58.0	51.6	57.0	49.0	44.0
	Lowest	10.1	4.9	11.5	10.0	8.0	9.9	2.0	0.0	6.0	−19.0
	Mean highest	44.9	43.2	45.0	43.4	46.1	43.2	39.8	39.2	35.4	33.9
	Mean lowest	28.3	29.6	26.8	26.0	28.3	28.6	26.2	24.6	24.2	20.2
	Monthly mean	36.6	36.4	36.3	34.8	36.6	35.3	31.5	31.8	29.8	27.0
December	Highest	46.1	50.4	49.0	45.0	49.0	48.5	39.5	43.0	37.0	30.0
	Lowest	− 4.2	3.1	4.0	0.0	1.0	1.3	−12.0	−14.5	−18.0	−39.0
	Mean highest	30.3	28.1	28.9	27.3	31.4	29.4	22.9	23.9	16.1	14.4
	Mean lowest	13.7	16.0	16.2	13.8	17.8	15.1	6.3	8.2	1.8	− 9.7
	Monthly mean	22.0	22.0	22.5	21.6	24.9	22.2	15.6	13.6	8.8	2.5
Annual means		41.0	42.1	42.5	41.7	43.6	42.2	39.1	38.3	29.1	28.0

AVERAGES OF TEMPERATURE FOR TWENTY-THREE YEARS.

TABLE II. Showing for each month the monthly average for the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario, derived from the twenty-three years 1882-1904, also the annual mean at each station for the same period.

Months.	Saugeen.	Birnam.	London.	Woodstock.	Stony Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockliffe.
	°	°	°	°	°	°	°	°	°	°
January	44.1	45.7	45.9	45.6	50.9	44.6	41.3	41.2	39.7	37.2
	— 7.5	— 9.5	-10.0	-11.9	— 4.8	— 7.9	—20.6	—26.7	—22.3	—34.5
	27.9	26.7	28.4	27.6	32.8	28.6	24.0	25.9	19.6	18.1
	13.0	14.2	13.4	11.1	17.9	15.9	6.2	3.8	1.3	— 6.1
	20.5	20.6	21.7	20.4	23.1	21.8	15.4	14.4	10.8	6.0
February	44.9	47.1	46.2	45.5	48.2	44.1	41.8	42.1	40.3	41.7
	—10.7	—11.5	—11.6	—11.5	— 6.0	— 7.9	—17.9	—20.3	—21.4	—35.0
	27.6	26.9	28.3	27.9	31.3	28.6	25.7	25.1	32.0	22.0
	11.1	12.9	11.8	10.8	15.7	15.3	5.9	3.8	3.3	— 0.2
	19.0	19.8	20.7	20.4	23.6	21.4	15.9	15.0	13.1	8.6
March	52.7	57.3	57.2	55.4	58.9	52.8	49.8	49.5	46.9	50.0
	— 3.6	— 3.2	— 1.9	— 2.8	5.5	3.6	— 7.1	—13.1	— 8.8	—24.3
	54.8	36.0	37.2	36.2	40.1	35.9	33.9	33.7	32.4	32.9
	17.8	21.0	20.2	18.6	25.2	21.5	15.8	13.1	14.7	6.9
	26.2	27.3	29.4	28.1	31.2	28.8	24.6	23.9	23.7	20.0
April	75.5	77.4	76.3	75.0	77.7	71.0	74.6	71.4	74.1	74.9
	14.9	17.4	18.2	17.1	28.3	20.9	13.7	11.3	14.7	6.0
	49.7	52.7	53.1	52.8	53.7	50.8	52.1	50.2	51.2	51.5
	31.4	34.1	32.6	32.0	36.3	33.9	30.7	29.2	31.3	26.2
	40.0	43.2	44.4	42.8	43.9	42.2	41.0	39.7	41.8	38.5
May	79.9	82.6	82.4	81.0	84.3	78.5	82.4	81.4	83.1	85.3
	28.5	29.2	30.1	29.2	34.0	32.2	28.3	27.6	31.1	24.2
	61.4	65.9	66.6	64.9	65.9	62.9	66.0	66.2	65.9	66.1
	41.5	44.5	44.3	42.6	45.7	44.0	42.2	41.8	43.4	38.5
	50.9	55.1	56.5	54.4	54.9	53.2	53.8	53.7	53.8	52.1
June	85.3	88.3	87.8	87.1	91.7	86.7	88.7	87.0	88.2	89.3
	37.8	37.6	38.6	38.7	42.2	42.7	39.2	37.3	42.3	33.6
	70.8	75.9	76.2	75.6	77.6	73.9	76.0	74.9	75.9	75.6
	50.7	53.5	53.4	51.8	56.1	53.7	54.2	51.1	53.8	46.8
	60.6	64.6	65.9	64.6	66.1	63.6	63.6	63.1	66.1	61.6
July	87.5	92.3	91.7	90.5	95.6	90.1	91.4	89.4	91.2	90.8
	43.1	42.4	43.9	43.9	49.3	47.9	43.4	43.1	46.9	39.8
	77.5	80.9	80.1	79.6	83.0	78.5	79.8	78.3	78.9	75.1
	57.7	57.1	57.1	56.0	61.2	58.3	55.1	55.5	57.9	52.7
	65.1	68.5	69.8	68.3	71.2	68.2	67.1	66.9	68.6	64.7
August	86.1	90.2	89.6	88.7	92.8	87.7	89.3	87.7	88.4	88.1
	42.0	41.7	40.4	41.5	46.9	46.0	40.1	40.0	43.1	37.0
	73.6	77.0	77.5	77.2	80.6	76.1	77.3	75.9	76.0	74.9
	54.9	55.4	54.1	54.7	58.8	55.8	55.0	53.2	55.6	50.0
	65.8	65.9	66.8	65.6	69.4	66.1	64.5	64.1	65.7	61.2
September	81.5	87.3	86.1	85.8	90.3	84.2	86.	83.8	84.6	84.4
	33.7	33.2	31.5	31.1	36.3	36.4	31.0	31.2	32.7	28.8
	68.4	70.6	71.0	70.1	73.9	68.9	69.4	68.5	68.2	67.5
	49.4	50.6	49.4	47.1	52.8	50.4	46.5	46.9	47.6	43.1
	57.9	60.5	60.6	59.1	62.2	59.5	57.2	57.2	57.9	53.7
October	74.0	75.9	74.9	74.1	76.8	72.1	73.4	72.1	70.5	72.4
	24.7	24.8	23.7	22.9	26.4	25.2	20.8	22.7	23.2	17.6
	56.2	57.1	57.6	56.4	61.2	55.9	55.0	55.3	53.7	53.1
	39.4	40.3	38.2	36.8	41.9	40.3	36.1	37.0	36.4	32.9
	47.6	48.7	48.1	47.1	50.2	47.9	44.8	45.5	45.3	42.1
November	61.3	63.3	62.5	61.4	66.1	60.2	58.6	59.6	57.0	56.7
	13.6	12.6	11.9	10.5	16.5	13.6	4.4	7.0	5.4	— 0.9
	43.3	44.2	44.1	42.8	51.1	43.4	40.5	40.6	38.1	36.9
	30.0	30.7	29.3	27.8	32.6	30.5	25.8	26.0	25.2	21.6
	36.1	36.7	37.0	35.9	39.4	37.0	32.9	33.2	31.8	28.9
December	49.9	49.2	50.3	49.2	54.2	48.0	44.6	44.6	42.3	40.6
	— 1.1	— 2.8	— 3.1	— 0.4	0.6	— 2.4	—14.0	—14.4	—16.8	—26.9
	33.2	31.6	32.9	32.0	36.1	33.4	28.8	29.1	24.0	28.7
	20.1	20.5	19.5	17.7	22.6	20.4	13.1	12.6	8.7	3.6
	26.5	26.1	26.7	25.6	29.7	27.2	21.3	21.3	17.0	13.5
Annual mean	43.0	44.8	45.7	44.4	47.0	44.7	41.8	41.4	41.4	37.6

RAIN AND SNOW.

TABLE III.—Summary of the total fall of rain and snow, and the number of days on which rain and snow fell in Ontario during the year 1904 at stations reporting the whole year, and the average for the Province.

Station.	Rain.		Snow.	
	Inches.	Days.	Inches	Days.
ALGOMA:				
Port Arthur	19.24	80	30.3	30
White River	18.55	95	85.7	83
Bruce Mines	26.87	77	85.5	47
Cockburn Island	26.67	88	54.5	21
Sayanne	19.15	50	65.0	21
BRANT:				
Paris	29.91	85	70.0	23
Brantford	24.63	44	67.5	27
BRUCE:				
Lucknow	26.50	108	154.1	79
N. Bruce	18.29	95	102.4	86
Saugeen	18.00	92	110.2	81
CARLETON:				
Ottawa	26.40	92	106.3	48
DUFFERIN:				
Orangeville	27.77	74	92.0	62
DURHAM:				
Port Hope	28.20	79	94.9	45
ESSEX:				
Cotiam	29.79	72	32.8	14
Windsor	25.16	88	48.3	27
ELGIN:				
Port Stanley	25.71	120	94.2	67
Cowal	18.32	43	54.5	24
Port Burwell	26.10	89	73.6	31
FRONTENAC:				
Arden	24.95	106	96.0	38
Kingston	28.41	102	62.3	61
Sydenham	29.52	51	84.5	26
GREY:				
Owen Sound	21.65	89	96.9	66
Meaford	18.65	85	113.0	65
Rocklyn	17.59	66	221.5	82
HALIBURTON:				
Haliburton	27.65	47	76.9	58
HALTON:				
Georgetown	28.51	110	78.1	71
HASTINGS:				
Deseronto	27.50	93	91.9	48
HURON:				
Goderich	19.98	58	113.0	48
Sunshine	22.40	86	82.3	52
Clinton	28.76	99	84.5	51
KENT:				
Chatham	20.73	71	51.3	20
LAMBTON:				
Wyoming	25.55	57	52.0	18
Sarnia	15.83	93	71.5	24
Birnam	30.32	70	79.5	37
LANARK:				
Montague	27.27	62	48.5	25
Smith's Falls	24.94	51	74.0	25
LEEDS:				
Lansdowne	18.18	52	45.5	17
Westport	26.29	66	115.3	53
LENNOX:				
Parma	25.67	72	100.5	29
MIDDLESEX:				
London	27.31	98	136.1	59
Westminster	27.84	46	61.1	25

Station.	Rain.		Snow.	
	Inches.	Days.	Inches.	Days.
MUSKOKA:				
Beatrice	30.06	91	90.8	47
Emsdale	32.34	103	79.6	55
Gravenhurst	26.55	89	97.0	77
Bala	28.21	85	116.5	50
NIPISSING:				
Calvin	24.78	77	82.9	57
NORFOLK:				
Port Dover	29.34	96	88.3	54
NORTHUMBERLAND:				
Wooler	25.78	47	67.0	28
OXFORD:				
Woodstock	24.41	89	81.9	51
PARRY SOUND:				
Parry Sound	27.95	87	113.0	70
PEEL:				
Alton	29.51	79	70.3	54
PETERBOROUGH:				
Jermyn	20.85	48	46.0	23
Peterborough	26.13	70	78.7	33
Lakefield	21.37	76	56.2	20
Otonabee	22.26	64	61.1	25
RAINY RIVER:				
Rat Portage	15.62	53	69.1	34
RENFREW:				
Clontarf	26.30	84	120.9	47
Rockliffe	28.08	105	59.7	49
SIMCOE:				
Midland	20.25	70	79.5	39
Orillia	29.78	67	78.1	29
Coldwater	20.89	41	49.5	30
VICTORIA:				
Lindsay	25.25	98	128.8	56
Kinmount	23.23	84	61.5	34
WELLAND:				
Niagara S.	20.85	49	36.5	24
WELLINGTON				
Guelph	24.53	78	59.6	42
WENTWORTH:				
Stony Creek	34.25	84	69.1	30
YORK:				
Aurora	23.74	72	61.9	42
Scarborough	27.41	76	47.9	33
Deer Park	29.38	69	49.2	30
Toronto	30.04	100	56.5	53
Agincourt	26.32	49	49.8	36
Sutton W.	20.62	102	52.0	22
Average for the Province: 1904	25.60	77	75.0	43
1903	26.44	78	99.8	49
1902	28.29	97	54.8	32
1901	24.12	79	76.3	45
1900	25.28	81	64.6	34
1899	25.18	81	69.5	34
1898	24.90	81	74.2	44
1897	28.30	88	78.0	49
1896	27.36	82	76.4	43
1895	21.61	79	82.4	50
1885-94	24.44	88	75.0	0

RAIN AND SNOW.

TABLE IV.—Monthly summary of inches of rain and snow in precipitation in the several districts of Ontario in 1904; also the average derived from the twenty-three years, 1882-1904.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total for year.
West and Southwest:	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Rain. 1904	0.97	1.74	1.79	2.37	2.94	2.28	3.62	4.32	2.25	2.25	0.21	0.39	25.34
Rain. 1882-04	1.11	1.34	1.39	1.86	3.22	3.06	2.96	2.58	2.63	2.69	2.27	1.50	26.61
Snow. 1904	25.7	7.1	9.9	8.5	.....	.....	.....	.....	.....	0.2	3.8	10.1	65.3
Snow. 1882-04	15.6	12.5	8.8	2.8	0.1	.....	.....	.....	.....	0.2	5.9	12.5	58.4
Northwest and North:													
Rain. 1904	0.07	0.45	1.26	1.74	3.41	3.22	3.12	3.20	3.75	2.36	0.57	0.40	23.65
Rain. 1882-04	0.77	0.56	0.98	1.46	2.67	2.81	2.91	2.83	3.11	2.97	1.87	1.01	23.95
Snow. 1904	21.5	18.7	12.1	5.3	.....	.....	.....	.....	.....	0.8	8.7	23.4	90.5
Snow. 1882-04	26.5	20.5	13.6	3.4	0.3	.....	.....	.....	.....	1.5	12.9	22.4	101.1
Centre:													
Rain. 1904	0.69	1.13	2.28	2.21	4.23	3.62	4.04	4.08	2.95	2.18	0.12	0.97	28.55
Rain. 1882-04	1.06	1.08	1.34	1.75	2.81	2.83	2.77	2.41	2.46	2.36	2.02	1.36	24.25
Snow. 1904	26.0	15.5	8.3	8.6	.....	.....	.....	.....	.....	0.2	0.8	6.7	66.1
Snow. 1882-04	18.2	14.8	9.8	3.2	0.1	.....	.....	.....	.....	0.4	5.6	11.5	63.6
East and Northeast:													
Rain. 1904	0.19	0.84	1.82	2.65	2.76	3.57	3.23	3.43	3.71	1.77	0.42	0.45	24.84
Rain. 1882-04	0.86	0.71	1.17	1.51	2.65	2.85	3.00	2.59	2.50	2.23	1.75	1.15	22.97
Snow. 1904	26.5	17.3	7.1	4.8	.....	.....	.....	.....	.....	0.2	4.0	18.2	78.1
Snow. 1882-04	21.1	17.6	11.6	3.4	0.1	.....	.....	.....	.....	0.6	7.8	14.7	76.9
The Province:													
Rain. 1904	0.48	1.04	1.78	2.22	2.36	3.20	3.50	3.76	3.24	2.14	0.33	0.55	25.60
Rain. 1882-04	0.95	0.92	1.22	1.65	2.84	2.89	2.91	2.60	2.67	2.56	1.98	1.25	24.44
Snow. 1904	24.9	14.7	9.4	6.8	.....	.....	.....	.....	.....	0.3	4.3	14.6	75.0
Snow. 1882-04	20.3	16.4	10.9	3.2	0.2	.....	.....	.....	.....	0.7	8.0	15.3	75.0

SUNSHINE.

TABLE V.—Monthly summary of bright sunshine at the principal stations in Ontario in 1904, showing the number of hours the sun was above the horizon, the hours of registered sunshine, the total for the year, and the average derived from the twenty-three years, 1882-1904.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
Sun above horizon	285.7	291.4	369.9	406.4	461.1	465.7	470.9	434.5	376.3	340.2	286.9	274.3	4463.3
Woodstock 1904	46.9	87.5	87.5	115.6	193.6	221.1	252.2	250.6	191.8	112.0	101.9	49.8	1710.5
Woodstock 1882-04	60.4	87.0	123.6	176.5	207.3	242.6	273.9	235.5	183.3	133.8	70.8	53.6	1848.3
Toronto 1904	87.0	131.5	105.2	133.7	208.5	239.4	258.5	272.9	192.5	146.0	121.2	68.5	1964.9
Toronto 1882-04	78.8	106.4	151.2	194.4	221.1	260.2	281.9	250.9	210.0	147.9	82.1	64.1	2049.0
Lindsay 1904	81.5	102.7	102.5	127.1	192.5	207.1	210.1	243.0	170.1	134.9	89.6	56.7	1717.8
Lindsay 1882-04	74.2	103.3	153.6	197.6	215.3	248.2	261.3	242.9	194.3	136.3	71.0	56.5	1954.5
Kingston 1904	74.3	126.3	121.6	117.1	228.8	240.4	241.9	264.2	164.3	121.8	89.0	58.9	1848.6
Kingston 1882-04	75.8	106.9	153.4	189.4	220.8	247.3	266.5	241.1	191.9	137.3	77.5	68.8	1976.7
Ottawa 1904	65.1	97.0	129.4	129.4	233.8	236.4	224.0	282.2	145.3	107.2	99.0	70.6	1789.4
Ottawa 1898-04	82.8	98.0	134.8	183.5	228.0	224.5	244.0	227.5	160.9	119.2	85.1	52.3	1840.6
Average of five stations 1904	71.0	109.0	109.2	124.6	211.4	228.9	237.3	256.6	172.8	124.4	100.1	60.9	1806.2
Average of five stations 1903	54.4	90.9	99 8	184.7	284.1	196.0	261.2	180.6	203.7	152.4	114.0	59.5	1881.3
Average of five stations 1882-04	74.4	100.3	143.3	188.3	218.5	244.6	265.5	239.6	188.1	134.9	77.3	59.1	1933.9

Barrie having become inoperative, Ottawa was put in its place. Work at Ottawa well attended to.

TORONTO OBSERVATORY REGISTER.

TABLE VI.—Comparative Meteorological Register for the seven years 1898-1904, at Toronto Observatory in Lat. 43°.4 N., and Lon. 5 h. 17m. 34.658. W. Height above the sea 350 feet.

	1904.	1903.	1902.	1901.	1900.	1899.	1888.
	°	°	°	°	°	°	°
Average temperature	42.20	45.58	45.57	45.55	46.89	45.83	47.15
Difference from average (64 years)	— 2.22	- 1.16	1.15	1.13	2.47	- 1. 1	- 2.73
Thermic Anomaly (Lat. 43° 40')	— 8.81	- 5.43	— 5.44	— 5.46	— 4.12	— 5.18	— 3.86
Highest temperature	93.0	91.5	91.0	97.1	98.0	92.1	97.1
Lowest temperature	— 15.1	— 9.7	— 3.3	— 10.9	— 9.6	— 12	— 15.0
Monthly and annual ranges	108.1	101.2	94.3	108.0	107.6	104.1	112.1
Average daily range	17.29	16.68	16.81	16.90	16.70	17.51	17.48
Greatest daily range	36.0	34.5	33.2	43.0	37.6	35.0	34.4
Average height of barometer at 32° Fah	29.6380	29.6203	29.5940	29.5988	29.6213	29.6368	29.6216
Difference from average (63 years)	- .0189	.0011	— .0252	— .0204	- .0021	+ .0176	+ . 024
Highest barometer	30.449	30.309	30.394	30.328	30.324	30.403	30.218
Lowest barometer	28.752	28.742	28.868	28.802	28.657	28.732	28.779
Monthly and annual ranges	1.697	1.567	1.682	1.460	1.422	1.746	1.486
Average humidity of the air	79	76	77	77	76	76	76
Difference from average	2	— 1	0	0	— 1	— 1	- 1
Average elasticity of aqueous vapor—	0.259	0.275	0.278	0.291	0 295	0.279	0.289
Average temperature of dew point	41.2	42.7	43.0	44.3	44.6	43.1	44.1
Average of cloudiness	0.60	0.61	0.62	0.61	0.57	0.56	0.58
Difference from average	— .01	.00	.01	.00	— .04	— .05	— .03
	°	°	°	°	°	°	°
Resultant direction of wind	N 67 W	W	N 60 W	N 55 W	S 88 W	S 77 W	N 55 W
Resultant velocity of wind	2.09	2.45	2.53	2.99	3.09	2.66	1.78
Average velocity (miles per hour)	10.17	10.83	10.98	10.26	10.97	10.14	10.12
Highest velocity in month and year	50.0	40.0	44.0	45.0	44.0	50.0	52.0
Total amount of rain in inches	30.040	25.631	26.105	25.200	22.130	25.795	23.800
Difference from average (64 years)	- 3 047	— 1.362	— 0.888	— 1.793	4.863	- 1.198	— 3.193
Number of days of rain	100	100	116	102	99	105	98
Total amount of snow in inches	58.5	50.0	49.2	70.7	74.6	31.8	71.3
Difference from average (64 years)	—10.51	—17.01	—17.81	3.69	7.59	—35.21	- 4 29
Number of days of snow	53	52	37	54	42	40	53
Number of fair days	175	171	181	183	187	185	196
Number of days completely clouded	61	61	59	58	51	44	56
Number of auroras observed	2	5	2	2	3	10	7
Possible to see aurora (No. of nights)	177	184	185	201	224	226	210
Number of thunderstorms	37	26	34	29	34	29	34
Number of fogs	26	22	31	29	29	31	26
Number of hours of bright sunshine	1964.9	2039.9	1958.9	1981.6	2305.0	2148.2	2128.6
Number of hours of possible sunshine	4174.4	4463.3	4463.3	4463.3	4463 3	4463.3	4463.3

RURAL AREAS ASSESSED.

TABLE VII.—Showing by County Municipalities the rural area of Ontario as returned by Municipal assessors for 1904; also the comparative totals for the Province for the ten years 1895-1904.

Counties and Districts.	Acres of assessed land. Resident.	Non-resident.	Total.	Acres cleared.	Acres woodland.	Acres in swamp, marsh or waste land.	Per cent. cleared.
Algoma	363,445	83,871	447,316	47,456	346,223	53,637	10.6
Brant	212,646	3,295	215,941	189,012	12,573	14,356	87.5
Bruce	887,119	34,258	921,377	543,036	177,293	201,018	58.9
Carleton	554,949	10,333	565,282	312,876	94,447	157,959	55.3
Dufferin	354,269	1,640	355,909	253,769	32,336	69,804	71.3
Dundas	236,424	1,250	237,674	166,133	26,583	44,958	69.9
Durham	364,262	6,568	370,830	296,294	38,603	35,933	79.9
Elgin	433,714	3,161	436,875	337,059	90,982	8,834	77.2
Essex	423,428	1,614	428,042	311,442	108,137	8,463	72.8
Frontenac	626,813	62,178	688,991	271,940	217,589	199,462	39.5
Glengarry	288,565	.....	288,565	192,566	80,435	15,564	66.7
Grenville	262,620	9,747	272,367	176,989	40,787	54,591	65.0
Grey	1,064,654	2,101	1,066,755	668,962	200,919	196,874	62.7
Haldimand	274,567	5,968	280,535	234,234	41,392	4,909	83.5
Haliburton	556,286	10,309	566,595	38,748	323,347	204,500	6.8
Halton	223,774	691	224,465	177,044	27,519	19,907	78.9
Hastings	986,334	68,191	1,054,525	426,775	447,915	179,835	44.7
Huron	789,728	9,873	799,601	641,069	69,117	89,415	80.2
Kent	564,811	4,058	568,869	447,201	103,025	18,643	78.6
Lambton	656,857	2,725	659,582	438,319	176,642	44,621	66.5
Lanark	650,351	25,223	675,574	321,491	181,764	172,319	47.6
Leeds	469,029	3,890	472,919	279,707	131,872	61,340	59.1
Lennox and Add	428,680	12,505	441,185	286,385	94,042	60,758	64.9
Lincoln	183,219	7,795	191,014	163,088	27,028	898	85.4
Manitoulin	233,478	15,825	249,303	41,529	154,843	52,931	16.7
Middlesex	738,976	18,771	757,747	625,598	123,255	8,894	82.6
Muskoka	515,527	43,813	559,340	61,134	399,121	99,085	10.9
Nipissing	361,433	99,974	461,407	34,537	386,654	40,216	7.5
Norfolk	397,229	1,976	399,205	264,183	103,110	31,912	66.2
Northumberland	436,300	759	437,059	342,028	43,451	51,580	78.3
Ontario	490,931	11,612	502,543	361,618	33,032	107,893	72.0
Oxford	468,715	2,805	471,520	388,074	53,659	29,787	82.3
Parry Sound	523,791	61,061	584,852	69,323	427,173	88,356	11.9
Peel	283,334	6,081	289,415	258,198	17,680	13,537	89.2
Perth	499,640	18,425	518,065	435,605	45,501	36,959	84.1
Peterborough	547,476	20,998	568,474	247,362	183,993	137,119	43.5
Prescott	284,841	7,022	291,863	187,952	95,729	8,182	64.4
Prince Edward	225,912	6,431	232,343	194,510	21,137	16,696	83.7
Rainy River	156,424	36,276	192,700	13,415	161,166	18,119	7.0
Renfrew	977,441	51,777	1,029,218	324,598	484,160	220,460	31.5
Russell	235,635	14,559	250,194	110,143	119,985	20,066	44.0
Simcoe	949,847	16,361	966,208	615,856	221,347	129,005	63.7
Stormont	247,301	2,736	250,037	148,910	72,952	28,175	59.6
Thunder Bay	255,759	63,408	319,167	10,143	155,024	154,000	3.2
Victoria	562,527	42,544	605,071	275,598	84,547	244,926	45.5
Waterloo	302,258	4,659	306,917	249,819	35,955	21,143	81.4
Welland	220,266	7,658	227,924	192,009	31,397	4,518	84.2
Wellington	627,091	663	627,754	483,599	51,229	92,926	77.0
Wentworth	265,139	6,920	272,059	213,207	33,771	25,081	78.4
York	535,714	1,959	537,673	438,795	40,461	58,417	81.6
The Province:							
1904	23,199,529	939,317	24,138,846	13,809,368	6,670,902	3,658,576	57.2
1903	22,963,716	966,796	23,930,512	13,643,069	6,719,720	3,567,723	57.0
1902	22,932,677	794,333	23,727,010	13,570,229	6,684,512	3,472,269	57.2
1901	22,781,710	854,468	23,636,178	13,436,482	6,715,872	3,483,824	56.8
1900	22,728,082	840,022	23,568,104	13,297,206	7,127,363	3,143,535	56.4
1899	22,670,958	780,134	23,451,092	13,111,292	7,149,404	3,190,396	55.9
1898	22,492,838	899,746	23,392,584	12,993,614	7,198,905	3,200,065	56.5
1897	22,403,060	957,368	23,360,428	12,853,081	7,294,026	3,213,321	55.0
1896	22,174,899	997,509	23,172,408	12,671,851	7,264,167	3,236,390	54.7
1895	22,131,895	981,420	23,113,315	12,426,992	7,777,451	2,908,872	53.8

FALL WHEAT AND SPRING WHEAT.

TABLE VIII. Showing by County Municipalities of Ontario, the area, produce, and market value of the crops of Fall Wheat and Spring Wheat for the year 1904, together with the totals for the Province for the past ten years and the average for the twenty-three years, 1882-1904; also the average yield per acre.

Counties and Districts.	Fall Wheat.				Spring Wheat.			
	Acres.	Bushels.	Per acre	Market value.	Acres.	Bushels.	Per acre	Market value
Algoma	235	5,711	24.3	$ 5,637	1,700	27,540	16.2	$ 25,943
Brant	16,028	185,925	11.6	183,508	381	6,325	16.6	5,958
Bruce	28,744	408,165	14.2	402,859	1,869	29,530	15.8	27,817
Carleton	186	3,813	20.5	3,763	8,181	146,440	17.9	137,946
Dufferin	4,519	96,212	21.3	94,961	5,580	91,512	16.4	86,204
Dundas	72	1,411	19.6	1,393	1,142	20,556	18.0	19,364
Durham	6,773	123,946	18.3	122,335	16,268	239,140	14.7	225,270
Elgin	13,692	135,551	9.9	133,789	141	2,538	18.0	2,391
Essex	5,405	50,807	9.4	50,147	591	11,525	19.5	10,857
Frontenac	369	4,170	11.3	4,116	6,210	90,045	14.5	84,822
Glengarry	7	133	19.0	131	4,156	60,262	14.5	56,767
Grenville	63	901	14.3	889	1,375	23,513	17.1	22,149
Grey	24,267	395,552	16.3	390,410	5,330	81,549	15.3	76,819
Haldimand	22,413	170,339	7.6	168,125	564	7,783	13.8	7,332
Haliburton	39	636	16.3	628	1,050	12,390	11.8	11,671
Halton	23,360	322,368	13.8	318,177	974	14,902	15.3	14,038
Hastings	6,417	127,057	19.8	125,405	7,948	100,940	12.7	95,085
Huron	40,298	544,023	13.5	536,951	1,599	22,386	14.0	21,088
Kent	6,004	58,239	9.7	57,482	865	15,830	18.3	14,912
Lambton	23,053	313,521	13.6	309,445	906	14,496	16.0	13,655
Lanark	1,205	26,269	21.8	25,927	10,179	161,846	15.9	152,459
Leeds	940	18,518	19.7	18,277	4,973	83,546	16.8	78,700
Lennox and Ad.	1,711	31,311	18.3	30,904	4,002	50,825	12.7	47,877
Lincoln	13,179	115,975	8.8	114,467	136	2,040	15.0	1,922
Manitoulin	378	5,783	15.3	5,708	1,148	15,728	13.7	14,816
Middlesex	36,524	544,208	14.9	537,133	285	4,788	16.8	4,510
Muskoka	47	705	15.0	696	702	12,004	17.1	11,308
Nipissing	30	570	19.0	562	954	19,080	20.0	17,973
Norfolk	18,954	138,364	7.3	136,565	358	5,800	16.2	5,464
Northumberla'd	12,935	256,113	19.8	252,784	13,548	167,995	12.4	158,251
Ontario	11,541	241,207	20.9	238,071	17,722	288,869	16.3	272,115
Oxford	30,300	466,620	15.4	460,554	190	2,888	15.2	2,720
Parry Sound	23	446	19.4	440	1,460	20,002	13.7	18,842
Peel	19,451	410,416	21.1	405,081	3,923	57,276	14.6	53,954
Perth	33,674	461,334	13.7	455,337	1,097	20,404	18.6	19,221
Peterborough	8,460	175,122	20.7	172,845	8,212	112,504	13.7	105,979
Prescott	89	1,424	16.0	1,405	4,669	62,098	13.3	58,496
Prince Edward	4,943	53,384	10.8	52,690	4,139	48,426	11.7	45,617
Renfrew	218	4,643	21.3	4,583	29,807	417,298	14.0	393,095
Russell					1,788	34,330	19.2	32,339
Simcoe	64,471	1,373,232	21.3	1,355,380	10,453	155,750	14.9	146,716
Stormont	54	1,080	20.0	1,066	2,095	30,587	14.6	28,813
Victoria	6,601	143,902	21.8	142,031	14,340	250,950	17.5	236,395
Waterloo	34,464	506,621	14.7	500,035	273	4,696	17.2	4,424
Welland	14,753	97,370	6.6	96,104	233	3,215	13.8	3,029
Wellington	16,473	275,099	16.7	271,523	5,314	98,309	18.5	92,607
Wentworth	22,073	222,937	10.1	220,039	188	2,068	11.0	1,948
York	30,023	639,490	21.3	631,177	16,009	318,579	19.9	300,101
The Province:								
1904	605,458	9,160,623	15.1	9,041,535	225,027	3,471,103	15.4	3,269,779
1903	665,028	17,242,763	25.9	12,949,315	248,518	4,650,707	18.7	3,950,126
1902	748,592	20,233,669	27.0	14,305,204	303,115	6,048,024	20.0	4,209,425
1901	911,587	15,943,229	17.5	10,538,474	358,048	5,498,751	15.4	3,673,466
1900	1,068,640	23,369,737	21.9	15,517,505	376,905	6,940,333	18.4	4,684,725
1899	1,049,691	14,439,827	13.3	9,631,365	398,726	7,041,317	17.7	4,682,476
1898	1,048,182	25,158,713	24.0	17,460,147	389,205	6,873,785	17.7	3,750,659
1897	950,222	23,988,051	25.2	18,758,656	323,305	4,868,101	15.1	3,826,627
1896	876,055	15,078,441	17.2	10,705,693	255,361	3,519,322	13.8	2,484,641
1895	743,199	14,155,282	19.0	9,809,610	233,957	3,472,543	15.5	2,425,845
1882-1904	885,021	17,996,197	20.3	14,143,730	433,725	6,828,621	15.7	5,523,513

* Including Rainy River and Thunder Bay in this and succeeding tables.

BARLEY AND OATS.

TABLE IX.—Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Barley and Oats for the year 1904, together with the totals for the Province for the past ten years and the average for the twenty-three years, 1882-1904; also the average yield per acre.

Counties and Districts.	Barley.				Oats.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
Algoma	2,773	80,694	29.1	$ 35,263	14,138	497,658	35.2	$160,744
Brant	18,211	588,215	32.3	257,050	29,847	1,235,666	41.4	399,120
Bruce	21,968	707,370	32.2	309,121	101,101	3,639,636	36.0	1,175,602
Carleton	7,743	260,939	33.7	114,030	73,261	2,798,570	38.2	903,938
Dufferin	17,451	609,040	34.9	266,150	68,548	2,803,613	40.9	905,567
Dundas	4,283	126,349	29.5	55,215	38,050	1,308,920	34.4	422,781
Durham	30,749	943,994	30.7	412,525	57,967	2,469,394	42.6	797,614
Elgin	14,318	481,085	33.6	210,234	45,572	1,959,596	43.0	632,950
Essex	11,544	353,246	30.6	154,369	71,602	2,907,041	40.6	938,974
Frontenac	6,822	167,139	24.5	73,040	49,126	1,463,955	29.8	472,857
Glengarry	7,339	201,823	27.5	88,197	37,469	1,337,643	35.7	432,059
Grenville	2,988	95,616	32.0	41,784	33,735	1,214,460	36.0	392,271
Grey	32,525	1,089,588	33.5	476,150	142,510	5,230,117	36.7	1,689,328
Haldimand	8,573	224,613	26.2	98,156	34,129	1,269,599	37.2	410,080
Haliburton	507	11,002	21.7	4,808	6,245	179,856	28.8	58,093
Halton	12,442	347,132	27.9	151,697	26,126	974,500	37.3	314,764
Hastings	24,159	630,550	26.1	275,550	69,972	2,190,124	31.3	707,410
Huron	39,803	1,424,947	35.8	622,702	130,638	5,486,796	42.0	1,772,235
Kent	28,025	922,023	32.9	402,924	75,814	3,275,165	43.2	1,057,878
Lambton	27,887	858,920	30.8	375,348	88,162	3,350,156	38.0	1,082,100
Lanark	7,178	229,696	32.0	100,377	47,476	1,728,126	36.4	558,185
Leeds	6,172	160,472	26.0	70,126	51,680	1,612,416	31.2	520,810
Lennox & Add	18,641	479,074	25 7	209,355	45,816	1,557,744	34.0	503,151
Lincoln	2,069	58,967	28.5	25,769	20,162	745,994	37.0	240,956
Manitoulin	1,972	60,540	30.7	26,456	6,752	249,824	37.0	80,698
Middlesex	27,093	904,906	33.4	395,444	93,139	3,883,896	41.7	1,254,498
Muskoka	630	14,994	23.8	6,552	12,693	406,176	32.0	131,195
Nipissing	722	20,505	28.4	8,961	6,269	204,996	32.7	66,214
Norfolk	9,139	283,309	31.0	123,806	37,061	1,415,730	38.2	457,281
Northumberl'd	19,883	560,701	28.2	245,026	54,968	2,154,746	39.2	695,983
Ontario	28,606	901,089	31.5	393,776	87,075	3,604,905	41.4	1,164,384
Oxford	23,358	843,224	36.1	368,489	80,271	3,403,490	42.4	1,099,327
Parry Sound	1,142	30,263	26.5	13,225	14,780	472,960	32.0	152,766
Peel	29,653	806,562	27.2	352,468	47,017	1,753,734	37.3	566,456
Perth	32,163	1,135,354	35.3	496,150	106,489	4,632,272	43.5	1,496,224
Peterborough	10,480	332,216	31.7	145,178	49,032	1,745,539	35.6	563,809
Prescott	3,839	97,127	25.3	42,445	37,150	1,207,375	32.5	389,982
Prince Edward	15,848	385,106	24.3	168,291	22,956	739,183	32.2	238,756
Renfrew	3,919	96,407	24.6	42,130	54,536	1,728,791	31.7	558,400
Russell	3,214	90,956	28.3	39,748	25,602	939,593	36.7	303,489
Simcoe	58,176	1,989,619	34.2	869,464	109,123	4,441,306	40.7	1,434,542
Stormont	3,534	96,478	27.3	42,161	29,817	1,040,613	34.9	336,118
Victoria	14,793	448,228	30.3	195,876	73,149	2,589,475	35.4	836,401
Waterloo	23,458	818,684	34.9	357,765	59,057	2,610,319	44.2	843,133
Welland	2,211	55,717	25.2	24,348	24,330	851,550	35.0	275,051
Wellington	41,513	1,515,225	36.5	662,153	130,536	5,338,922	40.9	1,724,472
Wentworth	13,928	435,946	31.3	190,508	34,044	1,293,672	38.0	417,856
York	48,990	1,592,175	32.5	695,780	99,944	4,227,631	42.3	1,365,525
The Province:								
1904	772,434	24,567,825	31.8	10,736,140	2,654,936	102,173,443	38.5	33,002,022
1903	709,839	24,378,817	34.3	10,263,482	2,638,665	109,874,053	41.6	32,193,097
1902	661,622	21,890,602	33.1	9,872,661	2,500,758	106,431,439	42.6	37,038,141
1901	637,201	16,761,076	26.3	7,542,484	2,408,464	78,334,490	32.5	28,357,085
1900	577,810	16,909,751	29.3	6,577,893	2,398,834	89,693,327	37.4	23,768,732
1899	490,374	14,830,891	30.2	5,858,202	2,363,778	89,897,724	38.0	24,901,670
1898	438,784	12,663,668	28.9	4,812,194	2,376,360	86,858,293	36.6	22,409,440
1897	451,515	12,021,779	26.6	3,245,880	2,432,491	86,318,128	35.5	19,502,897
1896	462,792	12,669,744	27.4	4,003,639	2,425,107	82,979,992	34.2	16,595,998
1895	478,046	12,090,507	25.3	4,884,565	2,373,309	84,697,566	35.7	24,646,992
1882-1904	633,290	17,188,651	27.1	8,118,115	2,058,497	73,690,417	35.8	23,200,203

PEAS AND BEANS.

TABLE X. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Peas and Beans for the year 1904, together with the totals for the Province for the past ten years and the average for the twenty-three years, 1882-1904; also the average yield per acre.

Counties and Districts.	Peas.				Beans.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
Algoma	3,076	67,364	21.9	$ 42,439	13	260	20.0	$ 317
Brant	1,988	42,543	21.4	26,802	343	6,586	19.2	8,035
Bruce	30,050	619,030	20.6	389,989	55	963	17.5	1,175
Carleton	3,588	71,401	19.9	44,983	362	5,213	14.4	6,360
Dufferin	11,115	228,969	20.6	144,250	81	1,215	15.0	1,482
Dundas	537	11,814	22.0	7,443	114	2,280	20.0	2,782
Durham	16,921	313,039	18.5	197,215	490	9,457	19.3	11,537
Elgin	1,275	26,393	20.7	16,628	4,648	93,425	20.1	113,979
Essex	1,425	27,218	19.1	17,147	194	3,880	20.0	4,734
Frontenac	1,300	18,980	14.6	11,957	322	6,440	20.0	7,857
Glengarry	827	10,420	12.6	6,565	133	1,995	15.0	2,434
Grenville	627	12,540	20.0	7,900	112	1,680	15.0	2,050
Grey	38,193	733,306	19.2	461,983	133	2,128	16.0	2,596
Haldimand	9,672	196,342	20.3	123,695	375	6,600	17.6	8,052
Haliburton	1,353	18,942	14.0	11,933	13	182	14.0	222
Halton	4,566	96,799	21.2	60,983	39	585	15.0	714
Hastings	7,813	127,352	16.3	80,232	482	8,676	18.0	10,585
Huron	6,905	156,744	22.7	98,749	267	4,806	18.0	5,863
Kent	1,753	35,060	20.0	22,088	33,268	595,497	17.9	726,506
Lambton	2,639	45,919	17.4	28,929	1,555	27,057	17.4	33,010
Lanark	5,256	84,096	16.0	52,980	144	2,045	14.2	2,495
Leeds	2,393	46,664	19.5	29,398	195	3,900	20.0	4,758
Lennox & Add	2,321	44,563	19.2	28,075	189	3,270	17.3	3,989
Lincoln	3,620	66,608	18.4	41,963	208	4,160	20.0	5,075
Manitoulin	3,740	66,946	17.9	42,176	37	629	17.0	767
Middlesex	2,388	49,193	20.6	30,992	653	10,513	16.1	12,826
Muskoka	2,332	40,577	17.4	25,564	28	378	13.5	461
Nipissing	1,772	38,452	21.7	24,225	20	300	15.0	366
Norfolk	3,305	64,448	19.5	40,602	1,749	31,132	17.8	37,981
Northumberl'd	12,753	271,639	21.3	171,133	500	7,350	14.7	8,967
Ontario	9,771	201,283	20.6	126,808	139	2,697	19.4	3,290
Oxford	1,751	34,320	19.6	21,622	109	2,507	23.0	3,059
Parry Sound	3,447	68,595	19.9	43,215	14	210	15.0	256
Peel	6,907	147,119	21.3	92,685	50	800	16.0	976
Perth	6,299	140,468	22.3	88,495	23	345	15.0	421
Peterborough	17,718	382,709	21.6	241,107	63	882	14.0	1,076
Prescott	1,110	20,091	18.1	12,657	152	2,508	16.5	3,060
Prince Edward	4,016	89,557	22.3	56,421	484	9,196	19.0	11,219
Renfrew	20,513	328,208	16.0	206,771	258	3,870	15.0	4,721
Russell	482	9,640	20.0	6,073	147	2,205	15.0	2,690
Simcoe	33,023	673,669	20.4	424,411	508	8,636	17.0	10,536
Stormont	418	6,103	14.6	3,845	166	2,822	17.0	3,443
Victoria	16,835	284,512	16.9	179,243	188	3,760	20.0	4,587
Waterloo	3,144	60,994	19.4	38,426	11	182	16.5	222
Welland	2,483	44,446	17.9	28,001	1,545	24,257	15.7	29,594
Wellington	14,365	278,681	19.4	175,569	43	645	15.0	787
Wentworth	4,564	84,434	18.5	53,193	100	1,750	17.5	2,135
York	6,911	141,676	20.5	89,256	170	2,975	17.5	3,629
The Province :								
1904	339,260	6,629,866	19.5	4,176,816	50,892	912,849	17.9	1,113,676
1903	407,133	8,924,650	21.9	5,738,550	53,039	978,246	18.4	1,379,327
1902	532,639	7,664,679	14.4	7,664,679	53,964	670,633	12.4	905,355
1901	602,724	10,089,173	16.7	10,689,173	53,688	824,122	15.4	1,030,153
1900	661,592	14,058,198	21.2	14,058,198	44,053	820,373	18.6	817,912
1899	743,139	15,140,790	20.4	15,140,790	40,485	651,009	16.1	703,090
1898	865,951	13,521,263	15.6	13,521,263	45,220	759,657	16.8	531,760
1897	896,735	13,867,093	15.5	13,867,093	50,591	981,340	19.4	639,834
1896	829,601	17,493,148	21.1	17,493,148	68,369	1,197,535	17.5	819,114
1895	799,963	15,568,103	19.5	15,568,103	72,747	1,494,179	20.5	1,414,988
1882-1904	681,167	13,249,122	19.5	7,705,526	40,715	696,158	17.1	740,567

RYE AND BUCKWHEAT.

TABLE XI.—Showing by County Municipalities of Ontario, the area, produce, and market value of the crops of Rye and Buckwheat for the year 1904, together with the totals for the Province for the past ten years, and the average for the twenty-three years, 1882-1904, also the average per acre.

Counties and Districts.	Rye.				Buckwheat.			
	Acres.	Bushels.	Per acre	Market value.	Acres.	Bushels.	Per acre	Market value.
Algoma	131	2,188	16.7	$ 1,260	32	800	25.0	$ 389
Brant	3,279	49,185	15.0	28,331	1,871	36,485	19.5	17,732
Bruce	1,279	17,267	13.5	9,946	1,182	24,349	20.6	11,834
Carleton	884	14,409	16.3	8,299	2,817	48,452	17.2	23,548
Dufferin	6,342	100,204	15.8	57,718	2,716	48,888	18.0	23,759
Dundas	403	8,141	20.2	4,689	1,254	31,350	25.0	15,236
Durham	8,863	132,945	15.0	76,576	3,091	69,548	22.5	33,800
Elgin	3,528	60,682	17.2	34,953	2,150	40,850	19.0	19,853
Essex	1,329	28,308	21.3	16,305	494	8,892	18.0	4,321
Frontenac	2,911	47,449	16.3	27,331	1,437	27,590	19.2	13,409
Glengarry	307	4,912	16.0	2,829	670	14,070	21.0	6,838
Grenville	927	15,574	16.8	8,971	3,313	66,260	20.0	32,202
Grey	788	11,032	14.0	6,354	3,447	77,902	22.6	37,860
Haldimand	3,791	52,695	13.9	30,352	1,366	32,784	24.0	15,933
Haliburton	197	3,704	18.8	2,133	259	4,403	17.0	2,140
Halton	955	11,747	12.3	6,766	142	2,840	20.0	1,380
Hastings	7,385	118,160	16.0	68,060	4,662	83,916	18.0	40,783
Huron	2,071	32,101	15.5	18,490	1,634	36,765	22.5	17,868
Kent	1,360	23,936	17.6	13,787	603	11,457	19.0	5,568
Lambton	695	11,920	17.2	6,866	550	6,930	12.6	3,368
Lanark	949	15,753	16.6	9,074	3,300	61,380	18.6	29,831
Leeds	974	17,922	18.4	10,323	3,890	77,022	19.8	37,433
Lennox and Add	3,293	48,736	14.8	28,072	5,255	105,626	20.1	51,334
Lincoln	2,788	32,898	11.8	18,949	319	5,327	16.7	2,589
Manitoulin	170	2,550	15.0	1,469	24	480	20.0	233
Middlesex	795	15,026	18.9	8,655	832	17,888	21.5	8,693
Muskoka	119	2,166	18.2	1,248	165	2,772	16.8	1,347
Nipissing	20	354	17.7	204	61	1,037	17.0	507
Norfolk	11,924	149,050	12.5	85,853	10,859	232,383	21.4	112,938
Northumberland	10,097	141,358	14.0	81,422	7,565	165,674	21.9	80,517
Ontario	8,309	139,591	16.8	80,404	3,549	79,498	22.4	38,636
Oxford	2,355	34,383	14.6	19,805	2,140	53,500	25.0	26,001
Parry Sound	166	3,088	18.6	1,779	83	1,411	17.0	686
Peel	3,861	62,548	16.2	36,028	943	12,070	12.8	5,866
Perth	205	3,649	17.8	2,102	275	3,438	12.5	1,671
Peterborough	2,342	36,769	15.7	21,179	1,488	29,760	20.0	14,463
Prescott	92	1,564	17.0	901	1,218	24,847	20.4	12,076
Prince Edward	8,720	129,928	14.9	74,839	5,687	96,679	17.0	46,985
Renfrew	2,408	38,769	16.1	22,331	968	15,488	16.0	7,527
Russell	45	900	20.0	518	829	16,580	20.0	8,058
Simcoe	5,880	100,548	17.1	57,916	5,299	108,630	20.5	52,794
Stormont	71	1,243	17.5	716	1,762	44,050	25.0	21,408
Victoria	2,301	34,055	14.8	19,616	3,308	75,422	22.8	36,655
Waterloo	2,426	46,822	19.3	26,969	314	7,850	25.0	3,815
Welland	3,349	49,230	14.7	28,356	1,928	38,946	20.2	18,928
Wellington	1,182	19,385	16.4	11,166	1,062	21,240	20.0	10,323
Wentworth	3,053	42,437	13.9	24,444	1,647	37,716	22.9	18,330
York	5,385	84,545	15.7	48,698	2,148	54,989	25.6	26,724
The Province:								
1904	130,702	2,001,826	15.3	1,153,052	100,608	2,066,234	20.5	1,004,190
1903	179,277	2,970,768	16.6	1,443,793	95,487	2,049,169	21.5	907,782
1902	189,318	5,509,332	18.5	1,772,213	93,324	1,911,683	20.5	917,608
1901	158,236	2,545,268	16.1	1,254,817	88,266	1,757,071	19.9	850,422
1900	142,213	2,357,635	16.6	1,143,453	102,570	1,874,261	18.3	819,052
1899	137,824	2,284,846	16.6	1,142,423	132,082	2,203,299	16.7	1,002,501
1898	165,089	2,673,234	16.2	1,162,857	150,394	2,373,645	15.8	906,732
1897	187,785	3,382,005	18.0	1,275,016	151,669	3,464,186	22.8	1,039,256
1896	148,680	2,230,873	15.0	816,500	145,606	2,603,669	17.9	794,119
1895	120,350	1,900,117	15.8	866,453	135,262	2,791,749	20.6	1,027,364
1882-1904	122,936	2,008,778	16.3	1,036,891	99,642	1,942,173	19.5	790,704

CORN.

TABLE XII. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of corn for husking and for fodder for the year 1904, together with the totals for the Province for the past ten years and the average for the thirteen years, 1892-1904, also the averages per acre.

Counties and Districts.	Corn for husking.				Corn for silo.			
	Acres.	Bushels.	Per acre	Market value.	Acres.	Tons (green).	Per acre.	Market value.
Algoma	54	2,160	40.	$ 808	135	945	7.00	$ 1,890
Brant	5,455	332,755	61.	124,450	3,953	43,127	10.91	86,254
Bruce	697	27,880	40.	10,427	3,676	41,281	11.23	82,562
Carleton	1,435	50,225	35.	18,784	7,408	98,452	13.29	196,904
Dufferin	37	1,850	50.	692	442	4,420	10.00	8,840
Dundas	2,931	216,894	74.	81,118	5,682	65,343	11.50	130,686
Durham	1,640	93,480	57.	34,962	2,888	30,151	10.44	60,302
Elgin	24,569	1,425,002	58.	532,951	4,764	42,936	8.83	84,132
Essex	83,396	6,254,700	75.	2,339,258	2,171	14,828	6.83	29,656
Frontenac	2,730	161,070	59.	60,240	5,084	62,686	12.33	125,372
Glengarry	963	54,891	57.	20,529	4,382	44,435	10.14	88,870
Grenville	3,677	198,558	54.	74,261	4,609	27,654	6.00	55,308
Grey	288	12,960	45.	4,847	3,824	50,821	13.29	101,642
Haldimand	3,241	132,881	41.	49,697	2,677	17,588	6.57	35,176
Haliburton	113	5,650	50.	2,113	104	1,040	10.00	2,080
Halton	677	41,974	62.	15,698	3,769	43,984	11.67	87,968
Hastings	5,573	256,358	46.	95,878	7,409	78,313	10.57	156,626
Huron	1,337	62,839	47.	23,502	8,485	97,578	11.50	195,156
Kent	73,314	4,618,782	63.	1,727,424	3,086	18,639	6.04	37,278
Lambton	19,350	870,750	45.	325,661	6,424	50,942	7.93	101,884
Lanark	1,590	96,990	61.	36,274	6,874	70,596	10.27	141,192
Leeds	5,981	305,031	51.	114,082	6,784	71,843	10.59	143,686
Lennox and Add.	3,349	207,638	62.	77,657	2,183	16,373	7.50	32,746
Lincoln	7,845	494,235	63.	184,844	1,725	10,781	6.25	21,562
Manitoulin	39	1,560	40.	583	117	1,170	10.00	2,340
Middlesex	16,660	916,300	55	342,696	10,864	103,751	9.55	207,502
Muskoka	275	13,750	50.	5,142	164	1,640	10.00	3,280
Nipissing	73	3,285	45.	1,229	44	308	7.00	616
Norfolk	18,343	972,179	53.	363,595	4,745	37,011	7.80	74,022
Northumberland	3,063	143,961	47.	53,842	4,118	46,863	11.38	93,726
Ontario	1,775	85,200	48.	31,865	7,217	82,996	11.50	165,992
Oxford	10,215	694,620	68.	259,788	10,181	93,971	9.23	187,942
Parry Sound	147	6,615	45.	2,474	114	798	7.00	1,596
Peel	553	41,475	75.	15,512	3,226	45,164	14.00	90,328
Perth	510	19,890	39.	7,439	7,818	95,301	12.19	190,602
Peterborough	499	18,962	38.	7,092	2,056	21,794	10.60	43,588
Prescott	2,797	181,805	65.	67,995	1,979	26,380	13.33	52,760
Prince Edward	7,057	338,736	48.	126,687	3,037	33,407	11.00	66,814
Renfrew	641	32,050	50.	11,987	3,173	31,730	10.00	63,460
Russell	595	29,750	50	11,126	2,006	21,404	10.67	42,808
Simcoe	1,095	40,515	37.	15,153	2,910	40,536	13.93	81,072
Stormont	1,322	56,846	43.	21,260	4,131	41,310	10.00	82,620
Victoria	192	9,600	50.	3,590	2,820	23,200	10.00	46,400
Waterloo	809	46,922	58.	17,549	4,793	56,941	11.88	113,882
Welland	8,949	420,603	47.	157,305	1,802	14,596	8.10	29,192
Wellington	186	8,928	48.	3,339	3,331	32,477	9.75	64,954
Wentworth	3,411	208,071	61.	77,819	5,472	54,720	10.00	109,440
York	434	24,738	57.	9,252	8,559	111,988	12.50	223,976
The Province:								
1904	329,882	20,241,914	61.4	7,570,476	193,115	2,023,340	10.48	4,046,680
1903	378,924	29,287,888	77.3	10,807,230	209,727	2,564,409	12.23	5,128,800
1902	371,959	20,512,194	55.1	8,327,951	203,859	2,611,324	12.44	5,222,008
1901	323,923	24,838,105	76.7	9,438,480	197,582	2,359,514	11.92	4,719,028
1900	330,772	27,093,561	81.9	8,588,659	179,798	2,147,532	11.94	4,295,064
1899	333,590	21,673,234	65.0	4,291,300	171,935	1,697,755	9.87	3,395,510
1898	330,748	23,442,593	70.9	4,711,961	189,948	2,128,073	11.20	4,256,146
1897	333,030	24,663,998	73.6	4,858,808	209,605	2,669,822	12.77	5,339,644
1896	317,667	24,071,364	75.8	4,717,987	178,962	1,948,780	10.89	3,897,560
1895	302,929	24,819,899	81.9	5,609,296	149,899	1,775,654	11.85	3,551,308
1892-1904 (13 yrs.)	309,384	21,709,428	70.2	6,142,516	168,370	1,921,108	11.41	3,842,215

*The combined average area for corn for the twenty-three years 1882-1904, [illegible] acres, the average value of the produce for the same period being $7,294,246.

POTATOES AND CARROTS.

TABLE XIII. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Potatoes and Carrots for the year 1904, together with the totals for the Province for the past ten years and the average for the twenty-three years 1882-1904; also the averages per acre.

Counties and Districts.	Potatoes				Carrots.			
	Acres.	Bushels.	Per acre	Market value.	Acres.	Bushels.	Per acre	Market value.
Algoma	1,349	227,981	169	$ 115,586	108	34,992	324	$ 4,374
Brant	2,091	248,829	119	126,156	54	18,306	339	2,288
Bruce	3,453	549,027	159	278,357	246	72,324	294	9,040
Carleton	3,904	519,232	133	263,251	194	55,872	288	6,984
Dufferin	2,070	250,470	121	126,988	40	13,600	340	1,700
Dundas	2,078	268,062	129	135,907	113	33,900	300	4,238
Durham	2,714	233,404	86	118,336	134	39,798	297	4,975
Elgin	2,579	389,429	151	197,441	125	38,125	305	4,765
Essex	2,660	404,320	152	204,990	80	16,000	200	2,000
Frontenac	3,974	389,452	98	197,452	213	58,575	275	7,322
Glengarry	1,782	160,380	90	81,313	76	19,000	250	2,375
Grenville	2,858	411,552	144	208,657	123	27,675	225	3,459
Grey	4,910	667,760	136	338,554	382	126,060	330	15,757
Haldimand	1,265	123,970	98	62,853	46	10,580	230	1,323
Haliburton	508	60,452	119	30,649	28	8,400	300	1,050
Halton	1,455	123,675	85	62,703	65	13,000	200	1,625
Hastings	4,686	407,682	87	206,695	192	63,936	333	7,992
Huron	3,698	514,022	139	260,609	218	62,348	286	7,794
Kent	2,819	349,556	124	177,225	97	46,075	475	5,759
Lambton	2,868	304,008	106	154,132	164	52,480	320	6,560
Lanark	2,508	361,152	144	183,104	98	28,616	292	3,577
Leeds	3,006	285,570	95	144,784	176	39,072	222	4,884
Lennox & Addington	3,221	334,984	104	169,837	93	30,690	330	3,836
Lincoln	1,928	185,088	96	93,840	150	44,400	296	5,550
Manitoulin	480	79,200	165	40,154	59	12,154	206	1,519
Middlesex	4,923	703,989	143	356,922	233	67,570	290	8,446
Muskoka	1,113	149,142	134	75,615	92	19,504	212	2,438
Nipissing	968	135,520	140	68,709	49	19,600	400	2,450
Norfolk	2,756	341,744	124	173,264	222	71,706	323	8,963
Northumberland	4,521	610,335	135	309,440	273	78,897	289	9,862
Ontario	3,375	320,625	95	162,557	94	30,550	325	3,819
Oxford	2,667	346,710	130	175,782	32	13,344	417	1,668
Parry Sound	1,189	168,838	142	85,601	78	22,308	286	2,789
Peel	2,824	251,336	89	127,427	154	53,900	350	6,738
Perth	2,987	349,479	117	177,186	126	42,966	341	5,371
Peterborough	2,543	300,074	118	152,138	231	70,686	306	8,836
Prescott	2,429	315,770	130	160,095	112	25,200	225	3,150
Prince Edward	2,095	232,545	111	117,900	200	40,000	200	5,000
Renfrew	3,257	436,438	134	221,274	145	43,500	300	5,438
Russell	1,066	141,778	133	71,882	139	41,700	300	5,212
Simcoe	6,385	836,435	131	424,073	399	169,575	425	21,197
Stormont	1,808	148,256	82	75,166	85	17,000	200	2,125
Victoria	2,597	363,580	140	184,335	86	25,800	300	3,225
Waterloo	2,744	246,960	90	125,209	113	35,595	315	4,449
Welland	2,765	243,320	88	123,363	70	25,410	363	3,176
Wellington	4,266	281,556	66	142,749	156	45,084	289	5,636
Wentworth	3,004	258,344	86	130,980	94	37,600	400	4,700
York	6,673	447,091	67	226,675	177	59,472	336	7,434
The Province:								
1904	133,819	15,479,122	116	7,847,915	6,634	2,022,945	305	252,868
1903	139,011	16,676,447	120	7,354,313	7,805	2,612,778	335	326,597
1902	144,733	12,942,502	89	7,312,514	8,625	3,227,161	374	403,395
1901	154,155	18,116,637	118	7,717,687	9,221	3,199,967	347	399,996
1900	163,754	21,476,439	131	5,605,351	10,320	3,469,123	336	433,640
1899	168,148	19,933,366	119	6,538,144	11,891	3,674,035	309	459,254
1898	169,946	14,358,625	84	6,332,154	12,418	4,313,861	347	539,233
1897	169,333	16,100,797	95	6,424,218	12,025	4,433,628	369	554,204
1896	178,965	21,305,477	119	5,582,035	12,333	4,618,441	374	577,305
1895	184,647	29,390,884	159	5,936,959	13,002	4,581,373	352	572,672
1882–1904	157,241	18,110,925	115	7,338,377	10,388	3,620,075	348	452,510

MANGEL-WURZELS AND TURNIPS.

TABLE XIV. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Mangel-Wurzels and Turnips for the year 1904, together with the totals for the Province for the past ten years and the average for the twenty-three years, 1882-1904, also the averages per acre.

Counties and Districts.	Mangel-Wurzels.				Turnips.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
Algoma	81	35,073	433	$ 2,806	911	374,421	411	$ 37,442
Brant	1,748	901,968	516	72,157	2,969	1,627,012	548	162,701
Bruce	3,953	1,727,461	437	138,197	7,709	3,538,431	459	353,843
Carleton	1,347	664,071	493	53,126	2,077	1,096,656	528	109,666
Dufferin	517	188,705	365	15,096	4,507	2,122,797	471	212,280
Dundas	211	63,300	300	5,064	104	31,200	300	3,120
Durham	2,129	1,162,434	546	92,995	5,586	3,284,568	588	328,457
Elgin	1,178	563,084	478	45,047	327	148,785	455	14,878
Essex	725	297,250	410	23,780	110	44,000	400	4,400
Frontenac	636	177,444	279	14,195	382	126,824	332	12,682
Glengarry	317	110,950	350	8,876	359	143,600	400	14,360
Grenville	306	147,798	483	11,824	139	61,160	440	6,116
Grey	3,652	1,442,540	395	115,403	11,415	4,805,715	421	480,572
Haldimand	540	237,060	439	18,965	99	29,700	300	2,970
Haliburton	47	14,100	300	1,128	181	54,300	300	5,430
Halton	1,673	654,143	391	52,331	1,316	605,220	462	60,522
Hastings	1,035	398,475	385	31,878	1,817	754,055	415	75,406
Huron	5,555	2,510,860	452	200,869	7,716	3,618,804	469	361,880
Kent	858	386,100	450	30,888	202	90,900	450	9,090
Lambton	1,793	656,238	366	52,499	218	6,6272	304	6,627
Lanark	717	342,009	477	27,361	1,153	682,576	592	68,258
Leeds	579	180,069	311	14,405	625	171,250	274	17,125
Lennox & Add	361	133,209	369	10,657	353	123,903	351	12,390
Lincoln	651	274,071	421	21,926	205	92,250	450	9,225
Manitoulin	55	15,455	281	1,236	401	144,360	360	14,436
Middlesex	2,832	1,387,680	490	111,014	2,084	933,632	448	93,363
Muskoka	75	15,000	200	1,200	622	192,820	310	19,282
Nipissing	53	21,200	400	1,696	284	113,600	400	11,360
Norfolk	1,035	457,470	442	36,598	1,206	548,730	455	54,873
Northumberland	1,525	719,800	472	57,584	4,690	2,110,500	450	211,050
Ontario	3,700	2,094,200	566	167,536	11,328	6,117,120	540	611,712
Oxford	3,315	1,836,510	554	146,921	5,888	3,468,032	589	346,803
Parry Sound	63	28,350	450	2,268	959	318,388	332	31,839
Peel	1,475	659,325	447	52,746	1,950	951,600	488	95,160
Perth	4,956	2,567,208	518	205,377	5,354	2,821,558	527	282,156
Peterborough	1,481	733,095	495	58,647	2,176	1,057,536	486	105,754
Prescott	174	52,200	300	4,176	278	93,964	338	9,396
Prince Edward	464	139,200	300	11,136	169	50,700	300	5,070
Renfrew	612	229,500	375	18,360	860	358,620	417	35,862
Russell	310	124,000	400	9,920	632	316,000	500	31,600
Simcoe	3,476	1,765,808	508	141,265	9,198	5,003,712	544	500,371
Stormont	162	48,600	300	3,888	106	31,800	300	3,180
Victoria	1,704	834,960	490	66,797	5,139	2,374,218	462	237,422
Waterloo	2,325	1,171,800	504	93,744	4,920	2,587,920	526	258,792
Welland	421	177,241	421	14,179	126	42,966	341	4,297
Wellington	4,087	1,904,542	466	152,363	14,638	6,426,082	439	642,608
Wentworth	2,004	1,022,040	510	81,763	1,939	1,078,084	556	107,808
York	4,431	2,321,844	524	185,748	7,786	4,025,362	517	402,536
The Province :								
1904	71,344	33,595,440	471	2,687,635	133,207	64,861,703	487	6,486,170
1903	80,918	41,768,239	516	3,341,459	134,469	69,316,341	515	6,931,634
1902	76,553	39,140,924	511	3,131,274	136,725	71,740,204	525	7,174,020
1901	61,095	29,683,324	486	2,374,666	145,909	68,287,467	468	5,828,747
1900	54,543	24,728,525	453	1,978,282	156,583	59,330,395	379	5,933,040
1899	53,401	20,898,387	391	1,671,871	153,440	58,078,390	379	5,807,839
1898	47,923	21,957,564	458	1,756,605	151,601	64,727,882	427	6,472,788
1897	41,175	18,103,387	440	1,448,271	149,336	68,297,148	457	8,829,715
1896	36,101	16,849,401	467	1,347,952	148,234	69,814,841	471	6,981,484
1895	34,383	15,961,562	464	1,276,920	151,806	63,496,702	418	6,349,670
1882-1904	35,831	16,457,949	459	1,316,636	127,158	55,216,320	434	5,521,632

HAY AND CLOVER—ALL FIELD CROPS.

TABLE XV. Showing by County Municipalities of Ontario, the area, produce and market value of the crop of Hay and Clover for the year 1904, together with the totals for the Province for the past ten years and the average for the twenty-three years 1882-1894; also the average per acre. It also shows the aggregate area and the market value of all the field crops enumerated in Tables VIII-XV.

Counties and districts.	Hay and clover.				All field crops.		
	Acres.	Tons.	Per acre.	Market value.	Acres.	Market value.	Per acre.
Algoma	24,307	44,482	1.83	$ 354,522	49,043	$ 789,420	$16 10
Brant	34,415	57,473	1.67	458,060	122,633	1,958,602	15 97
Bruce	114,965	200,039	1.74	1,594,311	320,947	4,795,080	14 94
Carleton	74,201	151,370	2.04	1,206,419	187,588	3,038,001	16 51
Dufferin	46,591	94,114	2.02	750,089	170,556	2,695,776	15 81
Dundas	44,845	91,035	2.03	725,549	101,819	1,614,585	15 86
Durham	46,261	89,284	1.93	711,594	202,474	3,228,493	15 95
Elgin	65,063	112,181	1.71	894,083	184,469	2,938,074	15 93
Essex	44,039	56,165	1.29	447,635	225,265	4,248,573	18 86
Frontenac	85,269	161,158	1.89	1,284,429	166,785	2,397,081	14 37
Glengarry	56,341	116,626	2.07	929,509	115,128	1,741,648	15 13
Grenville	43,418	78,587	1.81	626,338	98,270	1,494,179	15 20
Grey	141,719	250,843	1.77	1,999,219	413,383	6,197,494	14 99
Haliburton	64,475	84,462	1.31	673,162	153,226	1,705,871	11 13
Hastings	18,859	17,501	1.33	139,483	23,803	273,561	11 49
Halton	35,377	75,353	2.13	600,563	112,930	1,749,929	15 50
Hastings	100,182	174,317	1.74	1,389,306	249,732	3,366,891	13 48
Huron	122,867	213,789	1.74	1,703,898	373,091	5,847,654	15 67
Kent	76,432	97,069	1.27	773,640	304,500	5,062,449	16 63
Lambton	88,902	138,828	1.56	1,106,459	265,254	3,606,543	13 60
Lanark	67,386	138,141	2.05	1,100,984	156,013	2,492,078	15 97
Leeds	73,083	140,319	1.92	1,118,342	161,451	2,327,133	14 41
Lennox and Add	85,850	151,096	1.76	1,204,235	176,638	2,414,115	13 67
Lincoln	43,827	58,728	1.34	468,062	98,812	1,256,699	12 72
Manitoulin	17,073	26,634	1.56	212,273	32,445	444,859	13 71
Middlesex	110,459	189,989	1.72	1,514,212	309,764	4,886,906	15 78
Muskoka	25,063	48,709	1.90	388,617	44,720	673,945	15 07
Nipissing	18,531	19,755	1.46	157,447	24,850	362,519	14 59
Norfolk	47,797	66,438	1.39	529,511	169,453	2,241,316	13 23
Northumberland	62,818	113,709	1.81	906,189	213,257	3,335,776	15 64
Ontario	59,061	121,112	2.03	965,263	253,862	4,426,228	17 44
Oxford	71,921	144,561	2.01	1,152,151	244,693	4,272,632	17 46
Parry Sound	25,547	37,554	1.47	299,305	49,212	657,081	13 35
Peel	43,792	91,337	2.09	727,966	165,689	2,629,381	15 87
Perth	82,172	185,530	2.27	1,486,644	284,148	4,914,396	17 30
Peterborough	49,798	85,155	1.71	678,685	156,579	2,320,376	14 82
Prescott	55,585	92,825	1.67	739,815	111,673	1,558,409	13 96
Prince Edward	41,084	75,595	1.84	602,492	120,899	1,629,918	13 48
Renfrew	79,007	130,248	1.63	1,038,077	201,222	2,634,016	13 09
Russell	33,470	66,940	2.00	533,512	70,325	1,098,975	15 63
Simcoe	78,084	182,455	1.86	1,454,166	408,490	6,989,056	17 11
Stormont	40,881	82,088	2.03	661,414	86,412	1,287,223	14 90
Victoria	48,876	86,511	1.77	689,493	192,429	2,882,066	14 98
Waterloo	47,895	107,285	2.24	855,062	186,746	3,243,476	17 37
Welland	50,350	62,434	1.24	497,599	115,315	1,332,522	11 56
Wellington	97,457	220,546	2.27	1,757,752	334,309	5,718,001	17 10
Wentworth	45,856	70,130	1.53	559,175	141,377	2,000,138	14 15
York	83,896	156,717	1.87	1,249,035	321,846	5,465,546	16 98
The Province:							
1904	2,626,207	5,250,189	1.80	41,915,736	8,673,525	134,304,690	15 48
1903	2,772,365	4,335,502	1.56	34,432,302	8,731,405	136,657,807	15 65
1902	2,646,272	4,955,438	1.87	40,386,820	8,677,988	146,421,171	16 87
1901	2,567,263	4,632,317	1.81	37,012,213	8,667,512	128,325,648	14 81
1900	2,526,560	3,131,045	1.24	26,568,222	8,794,953	114,758,761	13 05
1899	2,346,422	3,408,705	1.40	27,010,003	8,753,926	105,771,321	12 08
1898	2,453,503	4,399,063	1.79	27,362,172	8,835,272	110,528,947	12 51
1897	2,341,488	3,811,518	1.63	27,366,699	8,701,705	106,952,471	12 29
1896	2,426,711	2,260,240	.93	21,879,123	8,511,444	88,960,135	10 44
1895	2,537,674	1,840,914	.73	22,753,942	8,321,173	99,655,895	11 98
1882-1904	2,455,163	3,568,996	1.45	31,672,063	8,095,953	114,814,712	14 18

RATIOS OF AREAS UNDER CROP.

TABLE XVI.—Showing by County Municipalities of Ontario the number of acres under the various crops in 1904 per 1,000 acres of cultural land; together with the average for the Province for the past ten years and the average of the twenty-three years, 1882-1904.

Counties and Districts.	Fall wheat.	Spring wheat.	Barley.	Peas.	Beans.	Oats.	Buckwheat.	Corn for husking.	Corn for fodder.	Potatoes.	Turnips, mangels and other roots.	Orchards.	Hay and clover.	Total.
Algoma	1.6	2.9	23.7	7.4	1.4	39.6	.2	1.8	.1	.1	2.6	1.1	1.2	[illegible]
Brant	42.8	.6	26.1	17.6	10.1	1.8	17.1	.1	.1	4.1	2.1	.1	2.1	[illegible]
Bruce	2.9	.4	9.2	1.6	.1	.1	.1	.1	.1	.1	.1	.1	1.1	[illegible]
Carleton	.6	26.1	4.7	2.1	.1	1.2	.1	.1	.1	.1	.1	.1	.1	[illegible]
Dufferin	17.8	22.9	18.8	5.4	1.8	.2	2.1	.1	.1	.1	.1	.1	.1	[illegible]
Dundas	.4	5.9	24.8	22.0	.2	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Durham	21.2	54.9	105.8	16.1	37.1	1.1	23.2	.1	.1	.1	.1	.1	.1	[illegible]
Elgin	46.6	.4	42.7	13.2	.3	13.8	10.4	.1	.1	.1	.1	.1	.1	[illegible]
Essex	17.4	1.9	37.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Frontenac	1.4	22.8	25.1	18.3	.7	1.2	10.7	.1	.1	.1	.1	.1	.1	613.3
Glengarry	.1	21.7	28.1	19.4	1.3	.7	1.1	.1	.1	.1	.1	.1	.1	[illegible]
Grenville	.4	7.8	16.4	19.1	1.5	.6	5.2	18.7	.1	16.1	.1	.1	.1	[illegible]
Grey	36.5	8.0	48.4	11.1	57.1	.2	1.1	.1	.1	.1	.1	.1	.1	[illegible]
Haldimand	95.7	2.4	58.1	18.7	11.1	1.1	16.1	.1	.1	.1	.1	.1	.1	[illegible]
Hailburton	.8	27.1	1.6.1	16.1.2	28.7	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Halton	131.9	5.5	70.1	11.7	.2	.2	.1	.1	.1	.1	.1	.1	.1	[illegible]
Hastings	15.6	18.6	56.6	18.4.6	18.8	1.7	17.1	10.1	.1	11.6	.1	.1	.1	[illegible]
Huron	62.9	1.5	82.1	20.8	2.8	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Kent	13.4	1.6	62.7	30.6	.1	7.4	.1	.1	.1	.1	.1	.1	.1	[illegible]
Lambton	52.6	2.1	68.1	29.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Lanark	6.7	31.7	32.1	37.7	11.8	.1	.1	10.1	.1	.1	.1	.1	.1	[illegible]
Leeds	3.4	17.8	32.0	18.8	.1	.1	.1	11.1	4.6	10.7	.1	.1	.1	[illegible]
Lennox & Addington	6.6	14.9	61.1	20.8	.1	.1	11.7	15.1	10.4	11.2	.1	.1	.1	[illegible]
Lincoln	80.8	.8	12.7	13.8	22.1	1.1	17.4	.1	.1	11.8	4.0	.1	.1	[illegible]
Manitoulin	9.1	27.6	47.1	24.8	10.1	.8	3.1	.1	.1	11.4	1.1	.1	.1	[illegible]
Middlesex	78.4	.1	4.1	16.6	3.8	1.0	1.1	1.2	.1	.1	.6	.1	.1	[illegible]
Muskoka	.8	11.5	39.1	26.6	18.3	.1	1.8	2.7	.1	18.1	1.1	.1	.1	781.5
Nipissing	.2	7.1	29.1	21.8	3.1	.1	.1	1.8	.1	28.0	.1	.1	.1	[illegible]
Norfolk	71.8	1.4	3.1	14.1	12.1	1.4	25.1	11.1	.1	13.4	.1	.1	.1	[illegible]
Northumberland	67.8	39.6	.8	19.1	.1	.1	.1	21.1	.1	.1	.1	.1	.1	[illegible]
Ontario	41.9	40.1	78.1	20.8	4.1	.1	2.1	.1	.1	8.8	.1	.1	.1	[illegible]
Oxford	78.1	.1	69.1	20.8	.1	.1	6.1	.1	.1	.1	.1	.1	.1	[illegible]
Parry Sound	.5	21.1	16.1	31.2	10.7	.1	.1	1.1	.1	.1	.1	.1	.1	[illegible]
Peel	75.6	15.2	118.8	18.1	21.8	.1	15.1	.1	.1	.1	.1	.1	.1	[illegible]
Perth	77.3	2.5	76.8	4.1	1.5	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Peterborough	34.2	35.1	42.1	19.1	71.6	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Prescott	.5	24.9	20.1	19.6	5.9	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Prince Edward	25.4	21.6	81.5	18.8	20.7	2.5	41.8	20.2	31.9	.1	.1	.1	.1	211.2
Renfrew	.7	91.8	12.1	16.8.0	62.2	.8	7.1	.1	.1	.1	.1	.1	.1	[illegible]
Russell	.1	16.2	29.2	23.5	4.4	1.5	.1	.1	.1	.1	.1	.1	.1	[illegible]
Simcoe	104.7	17.0	84.5	17.2	5.6	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Stormont	.4	14.1	26.7	20.2	.2	1.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Victoria	24.0	52.0	80.7	26.1	61.1	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Waterloo	138.0	1.1	93.2	20.1	32.6	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Welland	76.8	1.2	11.6	12.6.7	12.9	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Wellington	84.1	11.0	85.8	20.9	25.7	.1	.1	.1	.1	.1	.1	.1	.1	[illegible]
Wentworth	103.5	.8	65.3	15.7	21.4	.5	14.1	.1	.1	.1	.1	.1	.1	[illegible]
York	68.4	36.5	111.6	22.7.8	15.8	.4	12.8	.1	.1	.1	.1	.1	.1	[illegible]
The Province.														
1904	43.8	16.3	55.9	19.2.2	24.6	3.7	9.5	7.8	27.9	9.7	5.5	9.6	211.9	[illegible]
1903	18.8	18.2	52.0	19.8.4	29.9	3.9	18.1	7.0	35.2	10.2	6.5.9	9.5	[illegible]	[illegible]
1902	35.2	22.3	48.8	18.4.3	39.2	4.0	15.3	6.9	42.9	10.7	6.5.6	10.1	[illegible]	[illegible]
1901	67.8	26.6	47.4	17.9.3	41.9	4.0	11.8	6.4	38.8	11.5	7.4.5	9.8	[illegible]	[illegible]
1900	80.4	28.3	43.4	18.0.4	49.8	5.3	10.7	7.7	38.4	12.3	8.4.1	11.3	190.0	[illegible]
1899	80.1	30.4	47.4	18.0.3	56.7	5.1	9.5	10.1	38.6	12.8	9.4.0	11.7	[illegible]	[illegible]
1898	80.7	30.6	35.8	18.2.9	66.6	5.4	12.7	11.3	40.1	13.1	9.3.7	11.7	[illegible]	[illegible]
1897	73.9	25.2	35.1	18.9.3	69.8	5.9	14.6	11.8	42.7	13.2	9.3.2	11.6	[illegible]	[illegible]
1896	69.2	20.2	36.5	19.1.4	65.5	5.4	11.7	11.5	39.2	13.7	9.2.8	11.7	[illegible]	[illegible]
1895	59.8	18.0	38.5	19.1.0	64.4	5.8	9.7	10.9	39.4	14.9	10.2.8	12.1	[illegible]	[illegible]
1882-1900	73.6	35.8	52.1	16.9.8	50.2	3.4	10.1	8.2	29.6	15.9	8.4.9	11.6	[illegible]	[illegible]

PASTURE—ORCHARD—VINEYARD—APPLES.

TABLE XVII. Showing by County Municipalities of Ontario the area in pasture (cleared land), orchard and garden, and vineyard, for the year 1904, together with the totals for the Province for the past ten years; also the number of apple trees and the yield.

Counties and Districts.	Pasture.	Orch'd & Garden.	Vine-yards.	Apple Trees 15 Years old and over.			No. of trees under 15 years in Orchards.
				No. of Trees.	Bushels.	Bush. per tree	
Algoma	9,061	961	3	3,735	15,799	4.23	20,404
Brant	28,256	6,205	73	104,553	861,517	8.24	41,651
Bruce	151,833	10,241	63	274,122	1,622,802	5.92	75,646
Carleton	95,613	3,582	4	56,471	400,944	7.10	72,263
Dufferin	46,776	3,423	7	64,483	354,657	5.50	40,742
Dundas	43,474	3,230	29	94,340	669,814	7.10	28,193
Durham	52,713	8,201	61	200,475	1,042,470	5.20	142,616
Elgin	94,576	10,746	98	203,676	1,855,488	9.11	77,355
Essex	37,819	12,833	1,784	184,655	1,298,125	7.03	67,913
Frontenac	83,808	5,140	20	103,488	798,927	7.72	48,007
Glengarry	52,132	2,474	14	49,153	345,546	7.03	23,072
Grenville	60,058	3,190	59	66,242	383,541	5.79	44,880
Grey	165,058	15,002	90	326,106	2,109,906	6.47	179,838
Haldimand	42,132	7,068	62	157,134	1,189,504	7.57	35,370
Haliburton	11,130	589	12	5,351	33,176	6.20	9,090
Halton	30,332	9,881	486	188,506	1,210,209	6.42	60,793
Hastings	103,264	10,565	32	174,060	1,291,525	7.42	184,287
Huron	189,944	15,323	52	368,017	2,642,362	7.18	106,350
Kent	68,045	17,486	324	336,606	2,692,848	8.00	115,915
Lambton	111,755	12,531	246	256,984	1,732,072	6.74	104,005
Lanark	113,833	3,063	12	57,389	301,292	5.25	39,155
Leeds	96,431	4,296	16	87,235	591,453	6.78	49,970
Lennox & Addington	81,884	7,407	.....	104,815	670,816	6.40	106,599
Lincoln	22,511	17,228	4,836	216,122	1,778,684	8.23	18,631
Manitoulin	6,572	629	7	3,873	12,587	3.25	16,580
Middlesex	219,486	16,055	113	312,890	2,622,018	8.38	105,917
Muskoka	13,522	1,120	7	4,604	21,317	4.63	19,419
Nipissing	6,480	359	27	714	2,535	3.55	4,306
Norfolk	42,632	11,043	97	188,016	1,788,032	9.51	35,159
Northumberland	73,975	16,297	147	373,755	2,911,551	7.79	302,373
Ontario	58,855	9,968	1	249,574	1,460,008	5.85	113,599
Oxford	91,818	11,353	57	202,896	1,925,483	9.49	55,078
Parry Sound	13,670	620	27	1,754	8,858	5.05	7,070
Peel	52,353	7,846	145	163,846	1,156,753	7.06	52,101
Perth	100,887	7,979	59	161,053	1,151,529	7.15	43,926
Peterborough	64,912	3,903	32	64,166	429,271	6.69	41,945
Prescott	44,622	1,844	7	41,485	285,417	6.88	33,998
Prince Edward	44,562	12,197	21	248,974	1,603,393	6.44	194,930
Renfrew	87,308	2,513	2	27,034	133,007	4.92	41,321
Russell	31,803	939	.....	8,833	30,916	3.50	15,316
Simcoe	97,507	12,492	207	230,023	1,419,242	6.17	204,598
Stormont	47,566	2,688	19	61,271	361,499	5.90	29,542
Victoria	53,696	4,298	65	83,083	324,024	3.90	45,544
Waterloo	31,527	6,047	14	120,592	660,844	5.48	40,800
Welland	31,457	10,123	1,437	217,070	1,821,217	8.39	18,036
Wellington	90,063	7,896	92	168,501	800,380	4.75	53,969
Wentworth	33,346	18,665	3,256	231,451	1,261,408	5.46	42,317
York	52,916	11,956	135	254,390	1,602,657	6.30	118,790
The Province:							
1904	3,183,973	369,495	14,357	7,103,566	49,687,423	6.99	3,329,379
1903	3,057,576	365,851	15,269	7,095,554	43,659,413	6.15	3,456,053
1902	2,879,972	356,251	14,028	7,024,890	47,648 743	6 78	3,446,904
1901	2,777,983	346,915	12.227	6,777,935	14,430,650	2.13	3,392,701
1900	2,694,600	339,411	10,687	6,518,048	36,993,017	5.68	3,430,670
1899	2,710,268	338,073	10,802	6,324,842	19,126,439	3.02	3,445,135
1898	2,708,043	335,420	10,118	6,221,324	†	.....	3,458,820
1897	2,658,245	326,341	11,100	6,102,399	13,343,720	2.19	3,435 018
1896	2,669,744	*320,122	.....	5,913,906	55,895,755	9.45	3,548,058
1895	2,728,655	*312,787	.....	5,835,915	†	.....	3,362,401

* Including vineyard.

† No estimate made.

HORSES.

TABLE XVIII. Showing by County Municipalities of Ontario the number and value of horses on hand on July 1, 1904, together with the totals for the Province for the past ten years; also the number and value of horses sold during the year ending June 30.

Counties and Districts.	On hand July 1.					Sold in year.	
	Working horses.	Breeding mares.	Other horses.	Total. No.	Total. Value.	No.	Value.
Algoma	2,219	443	522	3,184	$ 374,340	300	$ 30,900
Brant	5,830	1,179	2,130	9,139	884,672	790	82,950
Bruce	12,819	3,986	6,002	22,807	2,484,522	3,087	351,918
Carleton	8,580	2,189	3,692	14,461	1,512,009	1,256	148,208
Dufferin	6,544	1,913	2,456	10,913	1,204,189	1,122	123,420
Dundas	5,213	1,194	2,041	8,448	763,192	609	59,073
Durham	9,005	2,167	3,271	14,443	1,690,212	1,580	184,860
Elgin	9,977	2,397	3,743	16,117	1,660,805	1,993	217,237
Essex	11,728	2,600	4,864	19,192	1,850,346	1,632	158,304
Frontenac	7,126	1,668	2,459	11,253	1,045,060	919	92,819
Glengarry	5,793	2,107	2,440	10,340	963,780	858	78,936
Grenville	4,829	839	1,448	7,116	599,022	512	49,152
Grey	17,006	4,768	7,124	28,898	3,052,610	3,272	327,200
Haldimand	6,574	1,510	2,151	10,235	1,035,731	1,052	103,096
Haliburton	1,120	367	472	1,959	181,876	180	16,200
Halton	5,669	1,214	1,536	8,419	933,789	595	62,475
Hastings	11,689	2,120	3,748	17,557	1,659,310	1,373	123,570
Huron	15,826	5,541	7,407	28,774	3,206,634	4,242	530,250
Kent	15,827	3,546	6,162	25,535	2,560,426	1,791	195,219
Lambton	11,589	3,695	5,845	21,129	2,165,431	2,130	215,130
Lanark	6,836	1,523	2,432	10,791	1,113,454	1,296	130,896
Leeds	7,617	1,505	2,369	11,491	977,464	710	63,900
Lennox & Addington	7,865	1,869	3,001	12,735	1,114,898	861	80,073
Lincoln	6,151	1,038	1,497	8,686	887,462	589	60,667
Manitoulin	1,323	486	748	2,557	261,856	270	25,110
Middlesex	16,746	4,844	7,499	29,089	3,011,946	3,638	422,008
Muskoka	2,189	541	736	3,466	357,977	253	23,276
Nipissing	1,296	241	446	1,983	220,338	114	12,198
Norfolk	8,283	1,883	3,227	13,393	1,233,303	1,409	138,082
Northumberland	10,179	2,076	3,758	16,013	1,698,083	1,561	154,539
Ontario	11,096	3,391	4,341	18,828	2,158,488	1,871	211,423
Oxford	12,371	2,942	4,194	19,507	2,060,374	1,799	210,483
Parry Sound	2,070	464	585	3,119	354,986	267	24,831
Peel	7,611	2,165	2,794	12,570	1,442,163	1,088	122,944
Perth	12,644	4,001	5,595	22,240	2,490,324	2,704	310,960
Peterborough	7,261	1,434	2,429	11,124	1,119,745	853	81,888
Prescott	4,431	1,468	2,058	7,957	736,033	619	64,376
Prince Edward	6,127	1,208	2,420	9,755	897,430	704	68,288
Renfrew	7,940	1,942	3,012	12,894	1,372,062	1,031	112,379
Russell	2,822	1,024	1,454	5,300	538,264	379	34,868
Simcoe	18,548	5,291	7,383	31,222	3,449,931	3,126	353,238
Stormont	4,394	1,001	1,565	6,960	603,874	434	41,230
Victoria	7,621	2,541	3,400	13,562	1,427,145	1,312	137,760
Waterloo	8,374	1,903	2,686	12,963	1,403,948	1,307	143,770
Welland	6,465	1,132	2,201	9,798	910,236	809	81,709
Wellington	13,378	4,208	5,683	23,269	2,521,938	2,281	257,753
Wentworth	8,067	1,585	2,490	12,142	1,304,432	839	89,773
York	14,594	3,509	4,118	22,221	2,642,118	1,893	227,160
The Province :							
1904	399,262	102,658	153,634	655,554	68,138,228	63,310	6,836,499
1903	392,619	98,485	148,477	639,581	61,811,456	61,967	6,448,523
1902	393,307	93,425	139,374	626,106	55,173,637	54,538	5,079,127
1901	398,358	90,148	131,837	620,343	50,038,465	50,755	4,347,382
1900	405,883	90,136	121,290	617,309	46,916,999	47,926	3,774,480
1899	418,490	86,614	110,420	615,524	42,713,557	45,397	3,204,006
1898	430,504	77,886	102,851	611,241	38,659,896	44,401	2,884,107
1897	436,921	69,940	106,809	613,670	36,111,805	43,514	2,700,479
1896	434,384	66,883	123,482	614,749	37,185,693	44,458	2,712,888
1895	423,673	72,156	151,867	647,696	40,283,754	40,346	2,616,391

CATTLE.

TABLE XIX. Showing by County Municipalities of Ontario the number and value of cattle on hand on July 1, 1904, together with the totals for the Province for the past ten years; and also the number and value of cattle sold or slaughtered during the year ending June 30.

Counties and Districts.	On hand July 1.					Sold or slaughtered in year.	
	Milch cows.	Store cattle over 2 years.	Young and other cattle.	Total. No.	Total. Value.	No.	Value.
Algoma	5,718	2,559	8,485	16,762	$ 393,188	3,590	$ 101,271
Brant	12,895	4,569	16,187	33,651	866,938	8,818	276,180
Bruce	30,190	28,146	51,935	110,271	3,109,840	34,517	1,421,517
Carleton	35,498	10,279	29,116	74,893	1,819,140	18,362	632,204
Dufferin	13,499	12,592	20,616	46,707	1,256,866	11,838	425,103
Dundas	28,181	2,231	12,757	43,169	1,115,585	5,177	132,221
Durham	16,502	8,482	22,590	47,574	1,227,173	12,153	438,845
Elgin	26,153	17,603	32,241	75,997	2,243,047	26,488	1,006,809
Essex	19,814	8,038	25,643	53,495	1,324,246	15,183	414,648
Frontenac	31,424	7,310	18,999	57,733	1,404,967	10,393	268,347
Glengarry	30,357	5,028	16,587	51,972	1,235,936	7,486	184,518
Grenville	22,381	3,220	10,748	36,349	844,736	5,044	146,276
Grey	38,448	30,120	65,625	134,193	3,563,993	40,850	1,561,287
Haldimand	13,972	4,441	18,144	36,557	903,509	9,666	311,439
Haliburton	4,457	1,384	6,380	11,921	204,111	2,965	53,755
Halton	11,132	6,898	13,344	31,374	922,077	9,700	405,072
Hastings	48,387	7,310	33,469	89,166	1,908,001	15,681	356,429
Huron	32,529	43,628	61,888	138,045	4,223,122	42,578	1,854,698
Kent	23,519	23,114	37,041	83,665	2,505,238	21,893	862,146
Lambton	24,182	22,023	42,993	89,198	2,496,816	27,570	1,081,295
Lanark	27,690	12,267	27,700	67,657	1,487,784	15,969	506,856
Leeds	41,080	5,863	19,949	66,892	1,624,322	10,402	289,384
Lennox and Add.	27,204	5,523	20,558	53,285	1,205,581	12,143	328,468
Lincoln	9,434	2,078	8,388	19,900	563,410	5,590	188,271
Manitoulin	4,130	2,686	7,054	13,870	307,648	2,997	86,014
Middlesex	41,987	36,895	60,034	138,916	4,408,327	48,762	1,989,002
Muskoka	6,294	2,659	9,046	17,999	367,379	4,264	107,026
Nipissing	3,052	1,086	4,070	8,208	169,247	1,770	44,887
Norfolk	19,424	4,347	19,068	42,839	1,045,340	11,332	288,966
Northumberland	27,800	6,766	25,222	59,788	1,351,782	12,426	339,975
Ontario	23,760	12,304	37,507	73,571	2,053,311	20,547	843,660
Oxford	43,269	14,508	36,343	94,120	2,802,255	25,329	949,838
Parry Sound	6,133	3,336	9,464	18,933	384,697	4,142	102,100
Peel	15,348	11,526	17,006	43,880	1,271,315	14,771	616,098
Perth	33,655	21,154	45,098	99,907	2,776,222	29,130	1,215,012
Peterborough	22,526	7,743	23,744	54,013	1,135,890	11,451	291,199
Prescott	22,362	2,788	14,082	39,232	779,087	5,773	130,239
Prince Edward	16,053	2,208	10,093	28,354	686,101	5,118	126,159
Renfrew	27,759	14,156	30,846	72,761	1,450,676	14,997	378,224
Russell	15,029	2,720	9,847	27,596	639,369	3,845	81,283
Simcoe	33,854	20,841	52,399	107,094	2,693,366	26,228	894,375
Stormont	25,256	1,677	11,378	38,311	938,807	4,862	119,946
Victoria	19,390	13,625	31,513	64,528	1,492,836	12,665	403,380
Waterloo	15,372	7,404	20,336	43,112	1,190,427	19,537	852,985
Welland	10,750	3,053	12,094	25,897	668,252	6,555	202,484
Wellington	28,140	22,117	46,926	97,183	2,908,271	38,016	1,809,562
Wentworth	16,060	4,275	15,124	35,459	1,017,082	9,048	303,741
York	27,262	10,374	22,681	60,317	1,803,630	22,891	929,375
The Province:							
1904	1,078,992	504,954	1,192,358	2,776,304	72,821,003	730,212	26,342,872
1903	1,050,108	484,276	1,139,877	2,674,261	69,289,924	719,911	25,867,813
1902	1,010,746	458,834	1,093,004	2,562,584	62,517,342	673,544	23,340,908
1901	984,012	445,868	1,077,740	2,507,620	59,527,119	610,880	20,286,963
1900	976,124	392,665	1,060,541	2,429,330	56,320,810	560,893	18,017,989
1899	971,474	356,505	987,376	2,318,355	52,938,500	555,583	17,303,426
1898	965,021	345,695	905,227	2,215,943	47,286,254	552,485	16,121,559
1897	940,236	365,406	876,681	2,182,326	42,683,557	503,007	13,350,223
1896	920,346	370,409	891,203	2,181,958	44,383,633	436,451	12,381,248
1895	888,228	365,644	896,231	2,150,103	46,708,017	414,131	13,272,127

SHEEP.

TABLE XX. Showing by County Municipalities of Ontario the number and value of sheep on hand July 1, 1903, together with the totals for the Province for the past ten years; also the number and value of sheep sold or slaughtered during the year ending June 30.

Counties and Districts.	On hand July 1.				Sold or Slaughtered in Year.	
	Over 1 Year.	Under 1 Year.	Total. No.	Total. Value.	No.	Value.
Algoma	8,455	6,478	14,913	$ 60,695	5,967	$ 23,749
Brant	11,101	8,775	19,876	100,452	8,040	39,798
Bruce	18,125	15,480	93,605	147,184	42,100	192,818
Carleton	10,422	9,115	19,537	83,337	10,259	37,548
Dufferin	21,827	19,735	41,562	183,541	18,753	82,701
Dundas	2,958	3,023	5,981	24,542	3,527	12,521
Durham	19,092	16,397	35,489	161,821	14,069	63,029
Elgin	17,026	17,058	34,084	152,830	17,831	79,883
Essex	8,936	6,799	15,735	59,045	7,254	26,332
Frontenac	15,737	15,197	30,934	115,767	16,165	64,175
Glengarry	6,055	4,319	10,374	47,209	4,202	17,648
Grenville	4,146	3,434	7,580	28,516	5,104	16,843
Grey	59,767	58,483	118,250	525,934	58,151	230,859
Haldimand	9,757	8,897	18,654	93,943	8,894	38,600
Haliburton	6,315	4,629	10,944	41,917	5,197	16,994
Halton	9,477	8,498	17,975	102,306	9,954	53,055
Hastings	24,618	19,267	43,885	162,962	16,096	61,487
Huron	27,296	27,130	54,426	261,162	31,817	139,358
Kent	14,507	11,708	26,215	111,164	16,477	73,653
Lambton	18,256	18,348	36,604	167,913	17,669	80,217
Lanark	24,924	22,600	47,524	178,898	21,581	82,224
Leeds	7,718	8,021	15,739	62,112	8,160	33,671
Lennox and Addington	11,577	11,180	22,757	85,828	12,653	49,347
Lincoln	5,782	5,291	11,073	55,795	5,633	24,447
Manitoulin	12,575	9,636	22,211	79,552	8,456	27,313
Middlesex	20,851	18,645	39,496	212,062	19,187	100,732
Muskoka	13,197	11,017	24,214	96,728	9,473	34,387
Nipissing	2,774	1,891	4,665	18,035	1,326	5,251
Norfolk	10,799	10,352	21,151	88,102	11,205	51,319
Northumberland	11,761	11,220	22,981	97,640	10,347	39,629
Ontario	25,849	20,648	46,497	243,900	17,794	88,792
Oxford	7,018	6,585	13,603	62,681	8,335	38,508
Parry Sound	14,615	11,960	26,575	99,840	11,378	38,116
Peel	10,947	8,652	19,599	93,481	8,275	38,396
Perth	14,711	14,002	28,713	130,912	16,223	72,841
Peterborough	14,462	11,946	26,408	106,218	11,157	40,723
Prescott	8,665	7,277	15,942	57,094	6,552	21,753
Prince Edward	3,785	3,603	7,388	28,466	4,228	15,263
Renfrew	36,466	30,667	67,133	220,683	21,414	76,172
Russell	4,722	4,562	9,284	38,672	4,023	14,523
Simcoe	51,655	42,117	93,772	397,181	41,589	163,861
Stormont	4,069	3,656	7,725	34,962	4,016	16,707
Victoria	26,471	20,352	46,823	194,733	19,916	74,186
Waterloo	8,200	6,911	15,111	73,179	8,068	42,126
Welland	7,260	6,754	14,014	63,290	7,766	34,869
Wellington	41,204	38,295	79,499	411,200	40,352	189,654
Wentworth	9,026	8,443	17,469	89,474	9,331	42,923
York	17,794	13,699	31,493	165,542	17,280	87,091
The Province:						
1904	772,730	682,752	1,455,482	6,425,100	687,144	2,896,391
1903	860,718	781,909	1,642,627	7,228,498	727,850	3,074,393
1902	915,217	800,296	1,715,513	7,634,284	732,994	3,110,882
1901	947,614	814,185	1,761,799	7,772,793	729,148	3,103,513
1900	949,597	847,616	1,797,213	7,711,496	690,058	2,872,609
1899	930,314	842,290	1,772,604	7,315,729	665,238	2,629,201
1898	877,872	799,142	1,677,014	6,499,695	664,239	2,460,379
1897	897,685	792,265	1,690,350	6,003,194	732,872	2,558,471
1896	995,616	853,732	1,849,348	6,552,202	766,890	2,646,709
1895	1,095,995	926,740	2,022,735	7,708,442	632,315	2,484,612

SWINE.

TABLE XXI.—Showing by County Municipalities of Ontario the number and value of swine on hand July 1, 1904, together with the totals for the Province for the past ten years; also the number and value of the swine sold or slaughtered during the year ending June 30.

Counties and Districts.	On hand July 1.				Sold or slaughtered in year.	
	Over 1 year.	Under 1 year.	Total. No.	Total. Value.	No.	Value.
Algoma	1,260	4,869	6,129	$ 42,041	6,595	$ 65,752
Brant	5,019	35,578	40,597	260,764	38,970	381,127
Bruce	8,658	56,102	64,760	430,120	81,032	817,613
Carleton	5,403	26,291	31,694	210,917	31,807	327,294
Dufferin	4,854	32,216	37,070	236,780	38,592	397,498
Dundas	4,010	21,433	25,443	165,006	31,960	300,104
Durham	6,770	34,089	40,859	292,735	46,948	484,503
Elgin	9,291	66,358	75,649	470,732	84,550	826,054
Essex	19,674	100,582	120,256	739,714	101,934	1,062,152
Frontenac	3,460	19,401	22,861	141,847	23,867	234,374
Glengarry	4,037	16,852	20,889	135,638	20,828	218,277
Grenville	3,006	17,024	20,030	138,433	21,603	202,636
Grey	10,738	71,742	82,480	546,218	101,394	1,013,940
Haldimand	3,387	25,279	28,666	182,892	33,506	328,694
Haliburton	686	2,656	3,342	18,838	3,039	29,782
Halton	3,215	21,679	24,894	159,283	32,437	319,504
Hastings	9,033	40,834	49,867	363,327	51,821	514,064
Huron	8,857	70,160	79,017	521,661	96,759	1,006,294
Kent	15,322	101,827	117,149	724,243	118,267	1,188,583
Lambton	7,825	54,993	62,818	380,944	70,853	712,073
Lanark	4,234	20,450	24,684	140,970	25,238	252,380
Leeds	6,284	32,681	38,965	237,956	38,157	389,583
Lennox & Addington	3,909	19,686	23,595	162,339	29,001	282,760
Lincoln	2,851	19,766	22,617	151,193	27,298	285,537
Manitoulin	1,206	4,667	5,873	33,148	6,470	56,354
Middlesex	8,986	65,250	74,236	470,565	89,475	918,014
Muskoka	1,088	4,016	5,104	34,620	6,221	53,812
Nipissing	1,345	2,525	3,870	28,941	2,862	30,910
Norfolk	6,369	45,346	51,715	305,324	55,825	551,551
Northumberland	5,953	35,731	41,684	265,089	52,401	528,202
Ontario	7,466	52,631	60,097	380,666	69,552	733,774
Oxford	8,507	67,218	75,725	491,125	87,871	910,344
Parry Sound	1,178	4,386	5,564	36,278	6,530	62,231
Peel	4,224	27,497	31,721	211,612	39,283	372,010
Perth	8,639	65,502	74,141	498,625	88,013	892,452
Peterborough	3,786	25,284	29,070	167,861	35,666	334,904
Prescott	3,914	11,494	15,408	107,632	13,092	165,090
Prince Edward	2,978	18,592	21,570	140,827	25,784	252,683
Renfrew	7,369	19,646	27,015	179,932	20,517	220,968
Russell	2,464	7,601	10,065	65,718	8,373	90,177
Simcoe	14,229	90,334	104,563	623,427	114,858	1,203,712
Stormont	2,938	15,581	18,519	123,733	20,176	198,935
Victoria	5,464	31,804	37,268	232,453	41,144	424,195
Waterloo	5,698	45,239	50,937	348,697	58,245	604,001
Welland	2,634	17,989	20,623	135,396	25,315	246,821
Wellington	8,901	73,979	82,880	558,508	96,218	984,310
Wentworth	3,888	28,168	32,056	211,534	42,052	424,725
York	8,495	56,454	64,949	415,441	77,684	764,411
The Province:						
1904	279,502	1,729,482	2,008,984	12,921,743	2,240,083	22,665,164
1903	267,796	1,709,590	1,977,386	13,023,743	2,168,598	22,532,862
1902	238,992	1,445,643	1,684,635	11,262,265	1,991,907	20,154,190
1901	222,916	1,268,969	1,491,885	9,298,712	1,973,405	17,548,490
1900	265,457	1,506,184	1,771,641	9,598,153	2,056,049	15,800,799
1899	295,349	1,675,721	1,971,070	10,180,338	1,875,466	14,157,394
1898	265,048	1,375,739	1,640,787	8,720,242	1,592,697	11,852,535
1897	235,479	1,049,484	1,284,963	6,533,210	1,399,967	10,080,812
1896	243,756	1,025,875	1,269,631	6,505,227	1,304,359	10,022,525
1895	244,185	1,054,887	1,299,072	7,101,211	1,159,992	10,067,667

POULTRY.

TABLE XXII. Showing by County Municipalities of Ontario the number and value of Poultry on hand July 1, 1904, together with the totals for the Province for the past ten years: also, the number and value of Poultry sold or killed during the year ending June 30.

Counties and Districts.	On hand July 1.				Total value.	Sold or killed.	
	Turkeys.	Geese.	Ducks.	Other fowls.		No.	Value.
Algoma	2,368	1,240	609	38,141	$ 16,011	16,262	$ 6,017
Brant	2,651	2,239	2,203	116,257	44,580	55,575	21,674
Bruce	14,781	13,984	14,532	250,805	88,192	85,016	33,156
Carleton	16,370	9,667	5,776	175,659	83,160	81,169	34,903
Dufferin	10,436	8,412	5,980	111,714	44,622	51,953	19,400
Dundas	11,117	4,025	2,465	133,719	48,677	45,795	16,944
Durham	12,574	8,885	4,668	180,272	64,753	72,542	28,291
Elgin	26,743	5,298	8,312	235,500	88,791	122,365	45,275
Essex	23,887	8,232	12,302	281,320	98,427	138,684	48,539
Frontenac	14,770	3,227	4,889	102,942	50,301	64,912	23,368
Glengarry	4,734	2,555	2,287	116,550	40,405	59,811	21,532
Grenville	8,345	3,717	1,754	99,939	36,913	46,190	17,552
Grey	19,700	16,661	17,567	343,521	128,757	131,526	51,295
Haldimand	9,458	4,319	2,544	119,975	43,690	67,746	24,389
Haliburton	1,490	647	435	19,485	6,984	7,074	2,122
Halton	5,767	4,442	5,666	114,950	50,323	59,647	26,841
Hastings	9,120	5,949	3,765	207,237	70,828	89,142	30,308
Huron	28,574	13,133	18,022	392,222	134,162	140,491	53,387
Kent	23,854	6,788	13,377	356,731	125,274	127,661	43,405
Lambton	30,125	8,841	16,620	310,227	109,754	136,118	50,364
Lanark	11,601	5,053	2,069	146,502	53,299	50,145	19,557
Leeds	13,272	4,326	3,772	128,130	46,631	55,871	22,907
Lennox and Add.	7,409	3,545	4,730	139,401	54,127	55,615	20,021
Lincoln	5,183	1,558	5,037	106,661	41,310	59,699	23,880
Manitoulin	987	1,070	1,103	23,069	8,005	8,081	3,152
Middlesex	53,976	10,890	13,402	420,134	172,600	185,885	78,072
Muskoka	3,243	918	1,817	44,167	17,721	23,116	9,015
Nipissing	1,316	261	403	21,456	9,348	9,646	4,051
Norfolk	15,894	4,626	5,563	212,388	70,343	95,466	36,277
Northumberland	13,211	4,467	6,138	205,757	68,461	78,693	31,477
Ontario	10,321	10,580	8,901	258,894	96,943	107,194	43,950
Oxford	15,604	4,821	7,262	242,193	86,214	98,347	39,339
Parry Sound	2,650	1,358	606	42,298	15,254	16,356	5,561
Peel	12,783	7,550	10,513	155,223	70,649	89,384	38,435
Perth	14,896	11,490	16,032	291,964	93,588	92,586	35,183
Peterborough	17,196	9,321	5,866	148,709	62,169	61,977	20,650
Prescott	4,617	4,599	1,916	91,790	32,880	37,446	12,732
Prince Edward	6,157	1,789	3,024	118,271	42,591	44,432	15,551
Renfrew	9,527	7,661	3,103	135,087	51,942	55,467	19,413
Russell	3,459	2,560	2,186	56,250	25,227	30,730	12,292
Simcoe	20,745	16,648	11,825	369,131	131,620	146,330	57,069
Stormont	4,882	2,867	741	101,090	36,346	41,048	12,314
Victoria	11,043	7,516	6,882	163,735	63,850	59,446	23,184
Waterloo	1,932	2,920	4,484	147,879	43,394	50,003	17,501
Welland	6,047	2,232	6,830	129,389	50,610	75,791	24,253
Wellington	15,584	15,100	9,931	258,175	103,706	104,651	39,767
Wentworth	4,471	3,183	4,676	136,543	46,893	67,173	27,541
York	13,349	7,553	9,126	242,578	106,704	138,001	56,580
The Province:							
1904	578,219	288,723	301,711	8,244,030	3,077,029	3,537,358	1,354,486
1903	647,056	317,910	358,802	8,359,805	2,973,646	3,684,451	1,407,340
1902	732,359	332,781	397,333	8,300,335	2,957,286	3,674,198	1,398,289
1901	825,823	360,278	435,094	8,124,041	2,859,172	3,495,999	1,305,555
1900	890,933	398,890	457,072	7,794,346	2,727,363	3,164,287	1,176,740
1899	927,456	421,830	458,497	7,536,241	2,658,321	3,102,614	1,162,901
1898	1,024,285	454,335	7,605,653		2,578,136	3,072,767	1,131,925
1897	890,228	409,715	7,135,398		2,318,038	2,965,221	1,083,914
1896	715,770	391,547	6,626,850		2,130,807	2,711,771	985,629
1895	696,604	420,022	6,636,214		2,156,623	2,392,458	860,334

WOOL.—BEES.

TABLE XXIII. Showing by County Municipalities of Ontario the number, weight and value of fleeces of the wool clip in 1903, together with the totals of the Province for the past ten years; also the number of colonies of bees and the value of apiaries.

Counties and Districts.	Clip of Wool.				Colonies of Bees.		
	No.	Pounds.	Lbs. per fleece.	Value.	No.	Value (incl'g outfit)	Value per hive.
				$		$	$ c.
Algoma	8,268	50,973	6.17	5,964	193	1,328	6 88
Brant	11,780	83,464	7.09	9,765	4,559	28,858	6 33
Bruce	47,353	296,426	6.26	34,682	5,836	33,790	5 79
Carleton	10,268	55,603	5.42	6,506	5,781	31,564	5 46
Dufferin	22,554	139,137	6.17	16,279	3,196	18,537	5 80
Dundas	3,243	19,000	5.86	2,223	3,463	18,700	5 40
Durham	19,795	152,010	7.68	17,785	3,876	20,078	5 18
Elgin	17,362	115,659	6.66	13,532	4,874	29,731	6 10
Essex	8,869	58,207	6.56	6,810	7,843	51,764	6 60
Frontenac	15,892	89,252	5.62	10,442	6,955	42,286	6 08
Glengarry	6,466	41,379	6.40	4,841	4,168	20,715	4 97
Grenville	4,172	22,873	5.48	2,676	4,524	22,801	5 04
Grey	60,015	368,842	6.15	43,155	7,005	43,221	6 17
Haldimand	9,429	66,341	7.04	7,762	5,785	33,842	5 85
Haliburton	6,178	36,877	5.97	4,315	662	4,051	6 12
Halton	8,989	70,328	7.82	8,228	1,049	6,997	6 67
Hastings	24,070	130,777	5.43	15,301	4,458	25,187	5 65
Huron	26,891	164,590	6.12	19,257	9,705	58,230	6 00
Kent	14,863	110,940	7.46	12,980	5,714	30,627	5 36
Lambton	18,505	124,337	6.72	14,547	7,716	43,132	5 59
Lanark	24,987	137,705	5.51	16,111	6,772	34,199	5 05
Leeds	7,866	44,424	5.65	5,198	7,669	39,802	5 19
Lennox & Addington	11,622	71,916	6.19	8,414	3,973	21,454	5 40
Lincoln	5,621	34,295	6.10	4,013	1,762	10,960	6 22
Manitoulin	12,200	70,753	5.80	8,278	1,054	5,354	5 08
Middlesex	20,578	152,620	7.42	17,857	11,639	62,385	5 36
Muskoka	13,155	67,906	5.16	7,945	335	1,936	5 78
Nipissing	2,828	15,097	5.34	1,766	67	354	5 28
Norfolk	11,038	65,955	5.98	7,717	4,342	24,489	5 64
Northumberland	12,160	81,084	6.67	9,487	5,709	28,830	5 05
Ontario	26,901	205,786	7.65	24,077	2,809	19,888	7 08
Oxford	6,893	48,085	6.98	5,626	3,645	21,287	5 84
Parry Sound	14,726	88,064	5.98	10,303	433	2,862	6 61
Peel	10,956	83,144	7.59	9,728	2,422	15,355	6 34
Perth	14,880	91,984	6.18	10,762	5,088	30,426	5 98
Peterborough	15,092	91,112	6.04	10,660	1,171	5,808	4 96
Prescott	8,383	47,440	5.66	5,550	7,385	46,230	6 26
Prince Edward	3,884	22,477	5.79	2,630	2,169	10,715	4 94
Renfrew	36,572	179,261	4.90	20,974	6,267	30,583	4 88
Russell	4,715	28,427	6.03	3,326	1,385	6,399	4 62
Simcoe	52,129	371,244	7.12	43,436	3,241	17,631	5 44
Stormont	4,344	26,571	6.12	3,109	4,395	20,393	4 64
Victoria	26,084	156,241	5.99	18,280	5,464	34,369	6 29
Waterloo	8,413	57,304	6.81	6,704	1,276	8,256	6 47
Welland	7,315	44,626	6.10	5,221	3,818	22,259	5 83
Wellington	43,200	298,928	6 92	34,975	1,938	11,899	6 14
Wentworth	9,144	67,612	7.39	7,911	3,410	22,199	6 51
York	18,189	124,966	6 87	14,621	4,064	24,831	6 11
The Province:							
1904	778,837	4,972,042	6.38	581,729	201,064	1,146,592	5 70
1903	865,503	5,419,900	6.26	541,990	207,936	1,180,165	5 68
1902	916,092	5,690,673	6.21	728,406	202,529	1,150,523	5 68
1901	950,229	5,834,097	6.14	781,769	202,247	1,114,099	5 51
1900	957,307	5,805,921	6.06	894,112	216,734	1,139,559	5 26
1899	928,184	5,525,122	5.95	790,092	203,343	1,053,454	5 18
1898	865,179	5,104,686	5.90	847,378	190,080	998,049	5 25
1897	887,003	6,139,984	5.79	945,757	166,811	885,196	5 31
1896	991,371	5,581,387	5.63	1,026,975	160,076	854,408	5 34
1895	1,109,140	6,214,811	5.60	1,242,962	173,173	938,658	5 42

FARM PROPERTY, IMPLEMENTS AND LIVE STOCK.

TABLE XXIV. Showing by County Municipalities of Ontario the value of farm lands, buildings, implements and live stock for the year 1904, together with the totals for the Province for the past ten years; also the aggregate value of live stock sold or slaughtered as determined from Tables xviii-xxii.

Counties and Districts.	Land.	Buildings.	Implements.	Live Stock.	Total.	Value of live stock sold or killed.
	$	$	$	$	$	$
Algoma	4,204,800	1,079,878	394,091	886,575	[illegible]	227,692
Brant	8,931,492	4,570,113	931,361	2,157,360	16,590,[illegible]	792,029
Bruce	23,627,674	8,752,756	2,156,317	6,559,858	41,096,605	2,820,022
Carleton	17,429,075	6,302,717	1,590,175	3,708,563	29,030,530	1,180,157
Dufferin	10,566,094	3,827,622	953,699	2,925,998	18,273,413	1,0[illegible]122
Dundas	8,264,263	3,759,520	1,034,385	2,117,002	15,175,170	520,8[illegible]
Durham	13,154,637	5,435,003	1,365,376	3,436,694	23,391,710	1,190,528
Elgin	17,569,632	6,843,090	1,717,299	4,616,205	30,746,226	2,175,258
Essex	17,900,462	6,548,467	1,873,193	4,071,778	30,393,900	1,709,975
Frontenac	10,186,999	3,866,193	1,145,912	2,757,942	17,957,046	68[illegible]053
Glengarry	8,224,743	3,822,675	1,096,110	2,422,968	15,566,496	517,911
Grenville	6,805,300	3,155,683	763,827	1,647,620	12,372,430	132,459
Grey	23,730,069	10,429,119	2,822,452	7,817,512	44,799,152	3,184,581
Haldimand	8,186,186	4,140,881	1,070,542	2,259,565	15,657,174	806,218
Haliburton	1,204,744	449,006	159,756	453,726	2,267,232	118,853
Halton	9,344,784	4,495,333	873,276	2,167,778	16,881,171	866,947
Hastings	15,862,327	6,110,378	1,881,376	4,194,428	28,048,509	1,085,858
Huron	30,624,165	11,908,371	2,798,000	8,349,741	53,080,277	3,783,987
Kent	26,653,490	9,045,075	2,566,666	6,029,345	44,294,576	2,[illegible]095
Lambton	21,732,791	7,218,417	2,029,207	5,320,858	36,301,273	2,139,079
Lanark	11,190,033	4,364,708	1,133,145	2,974,405	19,662,291	991,913
Leeds	11,693,247	4,835,251	1,293,951	2,948,785	20,771,234	799,445
Lennox and Add.	10,215,979	4,515,763	1,190,201	2,622,773	18,544,716	760,669
Lincoln	9,821,310	4,278,013	1,027,019	1,699,170	16,825,512	582,802
Manitoulin	1,317,691	496,629	199,743	690,209	2,704,272	197,943
Middlesex	32,715,946	11,969,864	2,741,649	8,275,500	55,702,959	3,507,828
Muskoka	2,478,453	1,074,537	362,747	874,425	4,790,132	227,516
Nipissing	1,652,048	457,680	213,724	445,909	2,769,361	97,297
Norfolk	11,677,827	5,346,883	1,437,140	2,742,412	21,204,262	1,066,195
Northumberland	13,442,079	6,258,985	1,658,334	3,481,055	24,840,453	1,093,822
Ontario	17,613,106	7,350,890	1,748,042	4,933,308	31,645,346	1,921,599
Oxford	21,617,812	9,307,688	1,982,737	5,502,649	38,410,886	2,148,512
Parry Sound	2,119,715	866,605	340,110	891,055	4,217,485	232,839
Peel	11,797,600	5,706,267	1,317,838	3,089,220	21,910,925	1,187,883
Perth	22,710,428	9,495,692	2,217,527	5,989,671	40,413,318	2,526,448
Peterborough	10,571,880	3,489,879	970,618	2,591,883	17,624,260	775,364
Prescott	7,879,302	3,151,234	900,444	1,712,726	13,643,706	394,190
Prince Edward	7,543,274	3,660,496	1,035,858	1,795,415	14,035,043	477,944
Renfrew	11,451,603	4,315,200	1,384,040	3,275,295	20,426,138	807,156
Russell	6,020,283	1,908,029	661,903	1,307,250	9,897,465	233,143
Simcoe	27,683,114	10,707,399	2,971,892	7,295,525	48,657,930	2,672,255
Stormont	7,143,567	3,260,837	836,818	1,737,722	12,978,944	389,132
Victoria	12,312,946	4,335,880	1,253,934	3,411,017	21,313,777	1,[illegible]005
Waterloo	13,052,122	5,970,145	1,323,556	3,059,945	23,405,768	1,660,383
Welland	8,455,812	4,146,193	948,235	1,827,781	15,378,024	590,136
Wellington	22,511,265	9,235,028	2,100,803	6,503,623	40,350,719	3,281,046
Wentworth	13,792,293	5,984,427	1,330,657	2,669,415	23,776,792	888,703
York	25,860,079	9,744,985	2,186,552	5,133,435	42,925,051	2,064,617
The Province:						
1904	640,544,541	257,995,484	65,992,210	163,383,103	1,127,915,338	60,695,112
1903	620,869,475	247,629,153	63,996,190	154,327,267	1,086,822,085	59,330,041
1902	604,860,063	237,289,668	62,199,787	140,544,814	1,044,894,332	53,083,306
1901	585,354,294	226,575,228	59,897,513	129,196,261	1,001,323,296	46,592,103
1900	574,727,610	219,488,370	57,324,130	123,274,821	974,814,931	44,042,017
1899	563,271,777	213,440,281	54,994,857	115,806,445	947,513,360	38,457,018
1898	556,246,569	210,054,396	52,977,232	103,744,223	923,022,420	34,450,583
1897	554,054,552	206,090,159	51,299,098	93,649,804	905,093,613	29,753,590
1896	557,468,270	205,235,429	50,730,358	96,857,566	910,291,623	28,748,995
1895	572,938,472	204,148,670	50,944,385	103,958,047	931,989,574	29,301,131

FARM VALUES AND RENTALS.

TABLE XXV.—Showing by County Municipalities of Ontario, average values per acre of farm property in 1904 and rentals of leased farms based upon (1) the total acreage occupied, and (2) the area cleared, together with the average for the Province for the past ten years.

Counties and Districts.	Farm values, average per acre occupied.					Value build-ings, imple-ments and live stock, per acre cleared.	Rent per acre on land.	
	Land.	Build-ings.	Imple-ments.	Live stock.	Total.		Occu-pied.	Clear-ed.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Algoma	4 38	1 13	41	92	6 84	33 23	81	2 17
Brant	41 36	21 16	4 31	9 99	76 82	40 52	2 46	2 86
Bruce	25 64	9 50	2 34	7 12	44 60	32 16	1 64	2 10
Carleton	30 83	11 15	2 81	6 56	51 35	37 08	1 97	2 43
Dufferin	29 69	10 75	2 68	8 22	51 34	30 37	1 80	2 23
Dundas	34 77	15 82	4 35	8 90	63 84	41 60	2 13	2 89
Durham	35 47	14 65	3 68	9 27	63 07	34 55	2 18	2 59
Elgin	40 22	15 66	3 93	10 56	70 37	39 09	2 46	3 02
Essex	41 82	15 30	4 37	9 51	71 00	40 11	2 52	3 07
Frontenac	14 79	5 61	1 66	4 00	26 06	28 57	1 52	2 09
Glengarry	28 50	13 25	3 80	8 39	53 94	38 13	1 67	2 33
Grenville	24 98	11 59	2 80	6 05	45 42	31 45	1 26	1 79
Grey	22 24	9 78	2 64	7 33	41 99	31 50	1 35	1 83
Haldimand	29 18	14 76	3 82	8 05	55 81	31 90	1 74	2 14
Haliburton	2 13	79	28	80	4 00	27 42	61	1 19
Halton	41 63	20 02	3 89	9 66	75 20	42 57	2 00	2 84
Hastings	15 04	5 79	1 78	3 98	26 59	28 55	1 24	1 88
Huron	38 30	14 89	3 50	10 44	67 13	35 96	2 10	2 46
Kent	46 85	15 90	4 51	10 60	77 86	39 45	2 77	3 26
Lambton	32 95	10 94	3 08	8 06	55 03	33 24	1 65	2 22
Lanark	16 56	6 46	1 68	4 40	29 10	26 35	1 48	2 07
Leeds	24 72	10 22	2 74	6 23	43 91	32 46	1 54	2 21
Lennox & Addington	23 15	10 24	2 70	5 94	42 03	29 08	1 47	1 89
Lincoln	51 42	22 39	5 38	8 89	88 08	42 95	2 14	2 56
Manitoulin	5 28	1 99	80	2 77	10 84	33 39	55	1 45
Middlesex	43 17	15 80	3 62	10 92	73 51	36 75	2 11	2 58
Muskoka	4 43	1 92	65	1 56	8 56	37 81	60	2 12
Nipissing	3 58	99	46	97	6 00	32 35	64	1 73
Norfolk	29 25	13 39	3 60	6 87	53 11	36 06	1 92	2 44
Northumberland	30 76	14 32	3 79	7 96	56 83	33 33	2 01	2 48
Ontario	35 05	14 63	3 47	9 81	62 96	38 80	2 29	2 75
Oxford	45 84	19 74	4 20	11 67	81 45	43 27	2 54	3 09
Parry Sound	3 63	1 48	58	1 52	7 21	30 26	44	1 74
Peel	40 76	19 72	4 55	10 67	75 70	39 17	2 29	2 78
Perth	43 83	18 33	4 28	11 56	78 00	40 63	2 20	2 53
Peterborough	18 59	6 15	1 70	4 56	31 00	28 51	1 35	2 15
Prescott	26 99	10 80	3 08	5 87	46 74	30 67	1 65	2 53
Prince Edward	32 46	15 75	4 46	7 73	60 40	33 37	2 17	2 51
Renfrew	11 13	4 19	1 34	3 18	19 84	27 65	1 17	2 12
Russell	24 06	7 62	2 65	5 22	39 55	35 21	1 78	2 18
Simcoe	28 65	11 08	3 07	7 55	50 35	34 06	1 84	2 37
Stormont	28 57	13 04	3 34	6 95	51 90	39 19	1 46	2 03
Victoria	20 35	7 16	2 07	5 64	35 22	32 66	1 96	2 66
Waterloo	42 52	19 47	4 31	9 96	76 26	41 45	2 23	2 64
Welland	37 09	18 20	4 16	8 01	67 46	36 05	1 63	1 86
Wellington	35 86	14 71	3 34	10 36	64 27	36 89	1 95	2 46
Wentworth	50 70	21 99	4 89	9 81	87 39	46 83	2 43	2 88
York	48 09	18 12	4 06	9 55	79 82	38 89	2 79	3 23
The Province :								
1904	26 53	10 69	2 73	6 77	46 72	35 29	1 91	2 49
1903	25 95	10 35	2 67	6 45	45 42	34 15	1 89	2 47
1902	25 49	10 00	2 62	5 93	44 04	32 43	1 85	2 47
1901	24 76	9 59	2 53	5 48	42 36	30 96	1 82	2 46
1900	24 37	9 31	2 43	5 23	41 34	30 09	1 80	2 48
1899	24 02	9 10	2 34	4 94	40 40	29 31	1 77	2 51
1898	23 78	8 98	2 26	4 44	39 46	28 23	1 76	2 50
1897	23 72	8 82	2 20	4 01	38 75	27 31	1 73	2 44
1896	24 06	8 85	2 19	4 18	39 28	27 84	1 88	2 54
1895	24 79	8 83	2 20	4 50	40 32	28 89	1 87	2 59

MARKET PRICES.

TABLE XXVI. The following table is compiled from thirty-six well distributed market points from quotations in the local press. The figures for the four months, September-December, 1904, are also given, together with the average price for the past ten years, and the average for twenty-three years, 1882-1904.

Counties and Districts.	Fall Wheat per bush.	Spring Wheat per bush.	Barley, per bush.	Oats, per bush.	Peas, per bush.	Beans, per bush.	Rye, per bush.	Buckwheat, per bush.	Corn (in ear), per bush.	Hay, per ton.	Potatoes, per bush.	Wool, per lb.
	cts.	cts.	cts.	cts.	cts.	$ c.	cts.	cts.	cts.	$ c.	cts.	cts.
Barrie	97.2		40.3	32.2	62.0		59.5	46.1		8 12	42.4	12.0
Belleville	94.3	85.1	45.3	31.3			60.4	48.1		7 75	46.3	14.5
Bracebridge			48.0	35.2	67.5		49.0	40.0		13 00	45.0	11.5
Brampton	98.8	86.6	46.1	32.4	62.3		57.7				54.8	
Brantford	93.5	93.5	42.5	30.7	62.0		56.2	50.0	44.1	8 00	56.0	
Brockville			58.3	37.5			52.5	50.8	43.3	8 13	51.3	11.5
Chatham	104.4		42.7	28.5		1 03			34.8	10 19	49.2	
Cornwall			50.0	33.6				50.0		8 00	49.2	
Dunnville	101.0	101.0	43.5	30.9	58.5		53.5	45.7	33.3	6 97	50.0	
Essex	105.0		40.0	30.0	54.0				33.3	7 00	50.0	
Forest	100.0		40.0	30.3	60.0	1 25			30.0	7 00	60.0	
Goderich	97.9	98.2	40.6	29.4	60.0		45.0	41.0		6 63	35.5	
Guelph	99.4	93.9	42.8	33.1	65.0				44.2	7 00	52.0	
Hamilton	101.5		46.5	36.1	63.2		65.5			8 95	61.1	
Kingston	99.6	92.2	44.1	33.1	63.6		62.4	49.8	40.9	7 00	54.8	10.0
Lindsay	96.9	91.4	38.8	29.8	65.0		61.1	46.3		6 50	40.8	
London	100.9		43.7	33.0	75.0		54.5	52.8	36.0	8 06	47.8	12.2
Morrisburg	90.0	90.0		32.6				47.5	40.0	7 17	51.7	
Mount Forest	99.2	92.2	38.0	31.0	59.8					5 19	41.2	11.4
Oakville	98.8	97.1	44.3	34.0	63.7		61.3			7 00	61.4	10.0
Orangeville	96.8	96.8	40.4	30.1	59.3		62.6	41.9		7 00	37.4	9.3
Ottawa	86.3		53.6	37.5	76.5		50.0	62.5		9 25	44.8	14.5
Owen Sound	97.8		43.1	34.4	61.2					7 00	46.9	
Pembroke	96.9	96.0	44.8	35.8	57.0	1.25	53.0			8 50	46.0	
Perth	77.5	87.5	49.0	31.4	62.5		50.0	46.9		7 89	41.4	13.0
Peterborough	98.3	93.8	40.4	32.2	61.8		49.0	46.5		10 50	58.7	
Picton	90.0	90.0	42.0	31.7	60.0	1 26	50.0	45.0		6 83	53.3	9.0
St. Thomas	101.3		42.5	30.1					42.7	8 00	46.7	9.9
Simcoe	90.7		41.0	30.3			59.7	48.8	34.4	7 67		
Stratford	99.4		38.0	28.5	60.0					8 31	55.3	
Toronto	102.2	100.0	48.4	36.0	67.3	1 26	72.2	52.8		9 99	62.1	12.9
Walkerton	100.5		40.0	30.6	61.0					7 00	41.1	
Waterloo	100.0		42.7	32.4	58.6					8 50	57.8	
Welland	103.6	103.6	46.4	33.2	56.7		53.2	50.0	39.8	8 47	53.6	
Whitby	95.9	95.4	40.8	29.7	65.0		56.0	48.8		8 50	63.8	13.5
Woodstock	101.2		42.1	32.0	63.2		53.0			7 40	49 7	
The Province:												
September	98.1	93.2	43.0	32.7	61.8	1 19	52.4	47.2	37.8	7 85	51.8	11.2
October	99.2	94.8	43.5	31.9	62.4	1 22	55.6	47.8	37.4	8 11	49.8	11.9
November	99.4	94.3	44.4	32.2	63.5	1 22	60.6	49.1	37.7	8 02	50.1	12.0
December	98.2	90.6	43.9	32.3	64.7	1 24	62.8	50.5	36.9	7 89	51.2	11.9
1904	98.7	94.2	43.7	32.3	63.0	1.22	57.6	48.6	37.4	7.97	50.7	11.7
1903	75.1	74.4	42.1	29.3	64.3	1 41	48.6	44.3	36.9	7.99	44.1	10.0
1902	70.7	69.6	45.1	31.8	71.0	1 35	50.5	48.0	40.6	8 15	56.5	12.8
1901	66.4	66.8	45.0	36.2	65.3	1 25	49.3	48.4	38.0	7 99	42.6	13.4
1900	66.4	67.5	38.9	26.5	57.1	1 00	48.5	43.7	31.7	8 48	26.1	15.4
1899	66.7	66.5	39.5	27.7	57.3	1 08	50.0	45.5	19.8	7 72	32 8	14.3
1898	69.4	69.2	38.0	25.8	52.2	70	43.5	38.2	20.1	6 22	44.1	16.6
1897	78.2	78.6	27.0	22.6	42.1	65	37.7	30.0	19.7	7 48	39 9	18 4
1896	71.0	70.6	31.6	20.0	44.0	68	36.6	30.5	19.6	9 68	26.2	18.4
1895	69.3	69.8	40.0	29.1	54.8	95	45.6	36.8	22.6	12 30	20 2	20.0
1882-1904	78.6	80.9	47.2	31.5	58.2	1 06	51.6	40.7	28.1	8 87	40.5	17.0

* Average for the thirteen years 1882-1901.

CHEESE FACTORIES.

TABLE XXVII.—Showing by county Municipalities of Ontario the number of Cheese factories in operation, the quantity and value of cheese made, the number of patrons, and the amount paid to patrons for milk delivered at the factories in 1904, together with the totals for the Province for the past ten years.

Counties and Districts.	Factories in operation.	Quantity of Milk used.	Quantity of Cheese made.	Gross value of cheese.	Average number of patrons.	Amount paid to patrons at the factory.
		lbs.	lbs.	$		$
Brant	7	10,323,304	944,020	80,255	387	69,814
Bruce	12	12,493,859	1,179,060	97,204	845	84,607
Carleton	56	65,225,445	6,252,005	515,378	2,237	441,617
Dufferin	4	3,874,173	355,161	29,304	282	24,799
Dundas	78	107,119,799	10,373,829	857,406	2,393	744,383
Durham	11	13,272,838	1,220,419	101,094	794	87,267
Elgin	20	45,226,365	4,164,727	345,058	1,762	301,662
Essex	2	1,000,000	100,000	8,000	100	6,902
Frontenac	69	88,819,453	8,464,362	702,923	2,587	607,784
Glengarry	68	69,536,071	6,705,429	578,810	2,097	501,563
Grenville	39	50,907,941	4,784,807	402,882	1,647	348,862
Grey	3	1,720,000	160,000	13,000	150	11,070
Haldimand	9	12,783,205	1,191,207	101,716	835	87,492
Haliburton	4	1,591,724	152,792	12,600	96	10,229
Hastings	97	150,983,185	14,190,082	1,180,077	4,421	1,044,988
Huron	7	8,430,873	787,311	65,471	554	57,039
Kent	3	1,087,151	104,399	8,386	150	7,029
Lambton	11	14,251,126	1,346,528	110,840	1,081	94,103
Lanark	46	65,032,616	6,118,582	513,171	2,314	444,704
Leeds	88	136,270,994	12,863,813	1,076,425	2,932	942,825
Lennox and Addington	30	68,582,096	6,612,220	547,556	2,454	467,879
Lincoln	5	8,306,476	775,039	63,098	636	55,309
Middlesex	30	56,991,871	5,255,769	440,146	2,173	384,698
Muskoka	1	267,601	25,924	2,413	26	1,959
Norfolk	22	36,000,740	3,418,233	280,987	2,095	243,523
Northumberland	39	71,350,929	6,514,814	534,373	2,549	464,339
Ontario	2	1,209,550	113,928	9,994	107	8,277
Oxford	42	119,475,723	10,931,794	922,102	3,290	817,135
Peel	2	1,253,523	119,664	9,911	39	8,458
Perth	24	48,530,024	4,516,434	381,827	2,089	49,252
Peterborough	40	56,384,963	5,199,452	434,729	2,239	375,923
Prescott	67	57,005,867	5,559,652	454,437	1,954	386,331
Prince Edward	23	54,035,244	5,144,487	431,598	1,976	371,356
Renfrew	24	23,608,451	2,286,251	188,717	1,278	156,765
Russell	56	53,058,128	5,236,928	433,563	1,740	373,286
Simcoe	9	4,251,604	401,243	32,918	360	26,309
Stormont	46	65,998,816	6,358,715	526,041	1,779	459,465
Victoria	17	19,591,234	1,844,990	155,077	997	132,347
Waterloo	8	5,316,400	494,629	41,411	352	35,893
Welland	3	3,682,948	349,867	28,460	310	3,677
Wellington	9	13,099,364	1,218,135	102,143	771	89,533
Wentworth	6	10,012,304	931,817	77,117	533	65,726
York	2	1,157,146	110,920	9,500	74	7,980
The Province:						
1904	1,141	1,639,121,124	154,879,438	12,908,118	57,485	10,904,159
1903	1,126	1,734,676,167	165,306,573	17,203,233	57,102	15,393,250
1902	1,127	1,537,532,591	146,805,776	14,792,924	55,843	13,153,255
1901	1,167	1,434,540,520	134,942,517	12,269,073	59,377	10,814,538
1900	1,173	1,366,433,199	127,789,543	13,023,025	59,294	11,682,470
1899	1,203	1,311,530,927	123,323,923	12,120,887	60,443	10,682,193
1898	1,187	1,374,399,482	128,116,924	10,252,240	65,121	8,417,535
1897	1,161	1,455,937,148	137,362,916	11,719,468	66,104	9,709,004
1896	1,147	1,108,124,659	104,393,985	8,646,735	57,635	7,040,927
1895	1,164	1,174,008,592	109,230,340	8,607,389	65,661	6,922,962

CROPS IN THE NORTHWEST TERRITORIES.

Year.	Spring Wheat.		Oats		Barley.		Flax	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
1898	307,580	5,542,478	105,077	3,040,307	17,092	449,512		
1899	363,523	6,915,623	134,938	4,686,036	14,276	337,421		
1900	412,864	4,028,294	175,439	4,226,152	17,044	353,216		
1901	504,697	12,808,447	229,439	11,013,066	24,702	795,100		
1902	625,728	13,956,850	310,367	10,661,295	36,445	870,117	17,097	158,185
1903	837,234	16,029,149	440,662	14,179,705	68,974	1,842,824	22,431	292,852
1904	957,253	16,723,412	523,634	16,383,519	86,154	2,205,434	16,264	171,279

CROPS IN MANITOBA.

Year.	Wheat		Oats.		Barley.		Flax.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
1889	623,245	7,201,519	218,744	3,415,104	80,238	1,051,554		
1890	746,058	14,655,769	235,534	9,513,443	66,035	2,069,415		
1891	916,614	23,191,599	305,644	14,752,665	89,828	3,197,876		
1892	875,990	14,453,835	332,974	11,654,090	97,644	2,831,676		
1893	1,003,640	15,615,923	388,529	9,823,935	114,762	2,547,653	9,737	116,454
1894	1,010,186	17,172,883	413,686	11,907,854	119,528	2,981,716	30,500	370,000
1895	1,140,276	32,775,038	482,653	22,555,783	153,859	5,645,036		1,281,354
1896	999,598	14,371,806	442,445	12,502,318	127,885	3,171,747		259,143
1897	1,290,882	18,261,956	468,141	10,629,513	153,266	3,183,602		247,856
1898	1,488,232	25,313,745	514,824	17,308,252	158,058	4,277,927		350,000
1899	1,629,995	27,922,230	575,136	22,318,378	182,912	5,379,156	21,780	304,420
1900	1,457,396	13,025,252	429,108	8,814,312	155,111	2,933,477	20,437	164,313
1901	2,011,835	50,502,085	689,951	27,796,588	191,009	6,536,155	20,978	266,420
1902	2,039,940	53,077,267	725,060	34,478,160	329,790	11,848,422	41,200	564,440
1903	2,442,873	40,116,878	855,431	33,035,774	326,537	8,707,252	55,930	586,950
1904	2,412,235	39,162,458	943,574	36,289,979	361,004	11,177,970	35,428	464,106

CROPS IN MANITOBA.—*Continued.*

Year.	Rye.		Peas.		Potatoes.		Roots.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
1893	2,229	29,422				1,649,385	20,919	3,890,798
1894		59,924		18,434		2,035,336	7,880	1,841,942
1895		81,082		28,229	16,716	1,042,562	6,785	2,285,283
1896		52,255		23,383	12,260	1,962,490	6,715	1,898,865
1897		48,344		33,380	13,576	2,033,298	6,130	1,220,070
1898		63,860		31,880	19,781	3,253,038	8,448	2,471,715
1899	3,217	64,340	1,366	20,490	19,151	3,226,395	10,079	2,670,108
1900	2,480	25,792	780	9,048	16,880	2,226,880	7,482	1,462,580
1901	2,707	62,261	879	16,349	24,429	4,797,433	10,214	2,925,362
1902	2,559	49,900	1,596	34,154	22,005	3,459,325	12,175	3,230,995
1903	4,899	88,182	2,357	41,483	27,198	4,757,000	12,250	3,452,340
1904	6,293	125,860	2,562	51,240	24,471	3,799,569	14,870	3,741,580

AGRICULTURAL STATISTICS OF THE UNITED STATES.

Wheat.

Year.	Acres.	Bushels.	Average yield per acre.	Total value.
				$
1904	44,074,875	552,399,517	12.5	510,489,874
1903	49,464,967	637,821,835	12.9	443,024,826
1902	46,202,424	670,063,008	14.5	422,224,117
1901	49,895,514	748,460,218	15.0	467,350,156
1900	42,495,385	522,229,505	12.3	323,525,177
1899	44,592,516	547,303,846	12.3	319,545,259
1898	44,055,278	675,148,705	15.3	392,770,320
1897	39,465,066	530,149,168	13.4	428,547,121
1896	34,618,646	427,684,346	12.4	310,602,539
1895	34,047,332	467,102,947	13.7	237,938,998
1894	34,882,436	460,267,416	13.2	225,902,025
1893	34,629,418	396,131,725	11.4	213,171,381
1892	38,554,430	515,949,000	13.4	322,111,881
1891	39,916,897	611,780,000	15.3	513,472,711

Corn.

Year.	Acres.	Bushels.	Average yield per acre.	Total value.
1904	92,231,581	2,467,480,934	26.8	1,087,461,440
1903	88,091,993	2,244,176,925	25.5	952,868,801
1902	94,043,613	2,523,648,312	26.8	1,017,017,349
1901	91,349,928	1,522,519,891	16.7	921,555,763
1900	83,320,872	2,105,102,526	25.3	751,220,034
1899	82,108,587	2,078,143,933	25.3	629,210,110
1898	77,721,781	1,924,184,660	24.8	552,023,428
1897	80,095,051	1,902,967,933	23.8	501,072,952
1896	81,027,156	2,283,875,165	28.2	491,006,967
1895	82,075,830	2,151,138,580	26.2	544,985,534
1894	62,582,269	1,212,770,052	19.4	554,719,162
1893	72,036,465	1,619,496,131	22.5	591,625,627
1892	70,626,658	1,628,464,000	23.1	642,146,630
1891	76,204,515	2,060,154,000	27.0	836,439,228
1881	64,262,025	1,194,916,000	18.6	759,482,170

Other Crops.

	1904.		1903.		1902.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Oats	27,842,669	894,595,552	27,638,126	784,094,199	28,653,144	987,842,712
Barley	5,145,878	139,748,958	4,993,137	131,861,391	4,661,063	134,954,023
Rye	1,792,673	27,241,515	1,906,894	29,363,416	1,978,548	33,630,592
Buckwheat	793,625	15,008,336	804,393	14,243,644	804,889	14,529,770

PART II.—CHATTEL MORTGAGES.

Table showing by County Municipalities of Ontario the total number and amount of Chattel Mortgages on record and undischarged on December 31st, 1904, against (1) all occupations, (2) farmers; together with totals for the Province for the past ten years.

Counties and Districts.	Chattel Mortgages against all occupations.				Chattel Mortgages against Farmers.			
	To secure existing debt.		For future indorsation.		To secure existing debt.		For future indorsation.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amt.
		$		$		$		$
Algoma	225	*1,116,658	6	78,500	123	38,629	2	15,750
Brant	339	246,317	....	.....	116	75,711	....	.....
Bruce	453	185,435	....	.....	291	98,895	....	.....
Carleton	645	792,846	4	4,785	82	28,726	....	.....
Dufferin	129	53,345	1	500	108	38,631	....	.....
Elgin	426	170,034	....	.....	201	81,117	....	.....
Essex	738	508,571	....	.....	318	99,305	....	.....
Frontenac	330	127,228	....	.....	163	43,365	....	.....
Grey	631	426,769	1	1,500	478	140,791	....	.....
Haldimand	122	68,025	....	.....	91	34,597	....	.....
Haliburton	61	13,090	....	.....	51	6,605	....	.....
Halton	70	44,730	....	.....	30	10,615	....	.....
Hastings	593	276,248	12	1,250	443	134,900	12	1,250
Huron	263	229,498	1	25	116	65,115	....	.....
Kent	773	216,118	2	616	592	142,012	....	.....
Lambton	530	307,413	4	1,267	351	112,902	4	1,267
Lanark	155	61,663	2	200	72	24,364	2	200
Leeds and Grenville	317	136,952	1	168	191	54,596	1	168
Lennox and Addington	205	94,064	3	3,810	115	44,601	1	150
Lincoln	155	191,439	4	551	44	16,025	2	251
Manitoulin	103	34,300	....	.....	82	12,989	....	.....
Middlesex	449	245,937	4	9,696	140	76,138	....	.....
Muskoka	221	185,415	1	488	111	27,408	....	.....
Nipissing	413	†2,111,366	....	.....	207	40,741	....	.....
Norfolk	211	‡ 434,963	....	.....	158	34,365	....	.....
Northumberland and Durham.	415	240,065	....	.....	298	157,420	....	.....
Ontario	237	156,918	5	2,469	145	71,802	4	2,369
Oxford	188	184,586	....	.....	59	22,425	....	.....
Parry Sound	177	§ 543,083	....	.....	75	11,294	....	.....
Peel	88	39,820	2	772	63	27,540	2	772
Perth	146	70,042	....	.....	71	35,890	....	.....
Peterborough	220	138,899	....	.....	112	63,306	....	.....
Prescott and Russell	147	55,134	....	.....	98	30,799	....	.....
Prince Edward	113	165,207	1	103	66	37,228	1	103
Rainy River	94	¶ 204,253	....	.....	22	5,291	....	.....
Renfrew	245	119,410	9	20,674	171	71,911	3	374
Simcoe	593	601,822	....	.....	396	147,712	....	.....
Stormont, Dundas & Glengarry	271	130,363	7	11,590	166	73,932	1	100
Thunder Bay	49	61,195	3	2,237	13	3,047	1	500
Victoria	165	80,043	2	283	114	38,217	2	283
Waterloo	193	158,681	....	.....	50	32,209	....	.....
Welland	201	189,470	....	.....	81	18,700	....	.....
Wellington	223	184,282	....	.....	88	53,282	....	.....
Wentworth	921	434,774	12	311,277	137	60,403	4	1,497
York	2,325	1,620,269	7	20,000	201	113,644	....	.....
The Province:								
1904	15,568	13,656,740	94	472,761	7,100	2,559,195	42	25,034
1903	14,885	14,354,605	187	491,978	7,085	2,548,758	88	19,446
1902	15,684	10,890,615	142	1,099,188	7,193	2,616,538	42	21,387
1901	16,299	10,613,564	247	237,445	7,757	2,854,759	134	30,207
1900	17,321	11,669,806	307	499,184	8,440	3,110,543	121	30,840
1899	18,216	11,067,664	291	324,628	9,392	2,988,853	124	34,798
1898	19,526	12,001,075	283	281,142	10,514	3,547,554	117	32,943
1897	21,144	13,004,342	382	377,853	11,902	3,889,100	201	44,410
1896	21,402	13,180,205	387	381,511	11,638	3,826,582	200	51,416
1895	22,018	10,555,922	373	456,398	12,121	3,711,348	167	36,258

* Including 2 mining companies for $269,000 and 10 lumbermen for $741,814.
† Including 12 lumbermen for $1,938,482.
‡ Including 1 Dock Co. for $376,000.
§ Including 23 lumbermen for $492,902.
¶ Including 4 mining companies for $[illegible]
Including 1 Cotton Co. for $300,000

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ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO

1904.

PART III—MUNICIPAL STATISTICS.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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PART III. MUNICIPAL STATISTICS.

POPULATION, ASSESSMENT AND MUNICIPAL DEBT.

The following statement is compiled from the summarized tables and gives population, total assessment, amount of taxes imposed, the amount of debenture and floating debt, all municipalities of the Province for the nineteen years, 1886-1904.

Year.	Population.	Total assessment.	Taxes imposed for all purposes.			Debenture debt.		Floating debt.
			Total.	Rate per head.	Mills on the dollar.	Total.	Rate per head.	
		$	$	$ c.		$	$ c.	$
1904...	2,076,970	906,105,659	15,553,950	7 49	17.2	*	*	*
1903...	2,056,516	888,495,028	14,764,032	7 18	16.6	63,927,539	31 09	8,526,493
1902...	2,037,267	859,943,263	14,146,831	6 94	16.5	61,179,468	30 03	7,760,872
1901...	2,028,889	835,697,607	13,341,355	6 58	16 0	59,496,650	29 32	7,223,781
1900...	2,013,860	822,435,670	12,992,821	6 45	15.8	57,172,802	28 39	7,768,033
1899...	2,010,748	816,765,473	12,535,284	6 23	15.35	56,389,603	28 04	6,302,266
1898...	2,001,350	809,184,833	12,222,966	6 10	15.11	54,506,372	27 11	6,883,735
1897...	1,990,977	803,625,377	12,206,325	6 13	15.19	53,577,475	26 91	6,482,953
1896...	1,972,286	814,917,633	12,122,785	6 15	14.88	52,948,275	26 85	6,261,394
1895...	1,957,390	821,466,166	12,316,429	6 29	14.99	51,895,991	26 51	5,834,129
1894...	1,936,219	826,179,370	12,320,312	6 36	14.91	49,724,587	25 68	6,669,567
1893...	1,910,059	825,530,052	12,512,660	6 56	15.17	48,083,243	25 17	6,796,422
1892...	1,909,527	825,211,127	11,803,570	6 18	14.30	47,166,962	24 70	6,469,899
1891...	1,922,121	818,847,394	11,767,748	6 12	14.37	43,888,853	22 83	7,629,730
1890...	1,917,544	798,616,271	10,897,485	5 68	13.65	40,720,985	21 24	8,387,186
1889...	1,906,901	761,905,816	10,249,198	5 37	13.45	38,988,332	20 41	6,493,519
1888...	1,880,145	748,654,570	9,919,962	5 28	13.25	34,729,527	18 47	6,437,363
1887...	1,848,457	717,311,938	9,300,113	5 03	12.97	31,943,320	17 28	5,645,208
1886...	1,828,495	694,380,659	9,009,385	4 93	12.97	29,924,863	16 37	4,841,717

* Statistics of debts for 1904 are not yet complete.

In 1904 there were 520 township municipalities, 114 towns, 133 villages, 15 cities and 38 counties. The assessed area of the Province was 24,435,174 acres.

The changes in population, assessment and taxation for townships, villages, towns and cities for the nineteen years are shown in table on page 212, while a comparison of the aggregate financial transactions of townships for ten years will be found on page 142, of villages on page 144, of towns on page 146, of cities on page 134, and of counties on page 128. The combined transactions of all Ontario municipalities for ten years are given herewith.

FINANCIAL STATEMENT—

Summary statement showing for all Municipalities in Ontario (including counties, townships, Liabilities for the ten years ending

Schedule.		1903.	1902.	1901.
RECEIPTS.		$	$	$
Balance from previous year	*a*	2,046,125	1,578,195	1,413,467
Ordinary municipal revenue:				
Municipal and school taxes	*b*	14,939,761	14,297,780	13,644,383
Licenses (liquor and other)	*a*	375,233	347,740	356,352
Fees, rents, tolls, fines, etc	*a*	755,232	728,062	683,629
Water rates, electric light or gas rates, etc	*c*	1,866,174	1,688,811	1,444,789
Surplus fees from registrar	*d*	17,929	14,520	12,614
Rates from local municipalities	*d*	1,115,242	1,114,766	1,060,743
Subsidies and refunds:				
Received from Legislature on account of—				
Schools	*d*	185,600	137,792	144,370
Administration of justice	*d*	90,283	140,288	122,330
Refund of loans, investments and special deposits	*a*	2,156,043	2,186,385	2,257,041
Interest and dividends	*a*	525,450	548,181	502,929
Loans:				
Money borrowed for current expenses	*a*	8,241,547	7,085,441	6,260,577
Money borrowed on debentures (face value) for—				
School purposes	*a*	230,055	497,068	173,272
Other purposes	*a*	4,548,817	3,261,285	4,442,646
Non-resident taxes collected	*d*	32,525	34,604	36,861
Towns or cities separated from counties	*d*	68,729	93,019	90,186
Miscellaneous	*a*	887,306	739,626	677,752
Totals		38,082,051	34,493,563	33,323,941
DISBURSEMENTS.				
Expenses of municipal government:				
Attendance at meetings of council and committees	*d*	47,504	42,768	41,407
Allowances, salaries and commissions	*a*	838,869	817,406	794,462
Lighting of streets, water supply, fire protection	*c*	2,077,426	1,855,821	1,709,301
Law costs (including salaries)	*a*	137,526	161,833	165,563
Other expenses of municipal government	*a*	607,458	482,473	597,345
Construction works:				
Roads, bridges, streets and parks	*a*	4,613,946	3,823,574	3,564,315
Grants to minor municipalities for roads	*d*	105,007	23,657	19,873
Water and electric light works	*c*	1,607,030	1,318,909	1,171,264
Buildings and other works	*a*	633,277	627,171	368,549
Drainage works	*e*	350,090	219,891	312,305
Administration of justice, gaols, police, etc	*f*	1,202,552	1,143,062	1,157,413
Support of the poor and other charities	*a*	446,204	418,343	400,945
County treasurer for levy	*g*	1,139,361	1,083,203	1,073,442
Payments on account of schools and education	*a*	5,188,486	4,937,354	4,685,150
Sinking Fund investments and deposits	*a*	2,329,689	2,046,632	1,963,474
Other investments and special deposits	*a*	1,296,803	611,050	757,113

ONTARIO MUNICIPALITIES.

cities, towns and villages), the total of the several items of Receipts, Disbursements, Assets and December 31st, 1894-1903.

1900.	1899.	1898.	1897.	1896.	1895.	1894.
$	$	$	$	$	$	$
1,645,145	1,849,739	1,641,559	1,728,747	1,648,455	1,314,226	1,356,761
13,203,140	12,669,127	12,217,687	12,178,312	11,881,641	12,159,570	12,148,097
322,151	338,142	331,603	337,530	334,559	344,036	836,158
575,683	533,076	501,409	483,134	514,408	480,160	
1,349,986	1,401,458	1,289,755	1,242,235	1,187,751	1,151,102	1,118,410
16,131	11,716	10,957	13,292	16,951	13,626	13,351
1,099,357	1,110,356	1,047,924	1,097,689	1,111,043	1,243,999	1,258,060
142,954	149,361	147,418	149,606	142,717	144,095	142,180
147,437	144,228	146,726	180,877	169,304	161,820	141,868
1,444,024	2,695,613	2,451,302	2,232,984	1,790,130	1,120,830	1,721,963
514,873	500,273	493,578	451,879	432,287	391,064	
6,807,547	5,525,298	5,205,349	4,892,579	4,516,049	4,592,405	5,483,286
165,842	156,105	338,993	162,866	253,325	366,686	214,074
3,031,113	4,079,658	4,267,653	3,785,949	4,137,606	3,953,322	5,759,403
42,540	55,524	73,120	81,235	71,176	99,044	89,459
89,910	81,535	79,175	97,267	107,562	95,797	102,615
458,722	567,932	677,370	660,422	672,585	543,264	568,275
31,056,555	31,869,141	30,921,578	29,776,603	28,987,549	28,175,046	30,953,960
39,616	44,548	38,934	43,443	72,772	62,740	67,512
773,736	772,441	709,169	717,526	719,371	696,348	673,268
1,623,999	1,449,992	1,490,253	1,346,008	1,337,712	1,372,206	1,369,531
157,984	137,986	149,569	156,287	143,877	176,121	614,722
529,808	503,775	467,339	445,967	451,167	465,008	
3,741,106	3,325,856	2,657,522	2,654,732	2,090,683	2,107,180	2,619,905
23,829	20,620	18,252	26,244	39,621	39,621	63,808
1,358,820	1,195,405	812,117	824,418	769,365	847,599	1,238,794
334,133	529,596	713,208	719,966	697,881	377,010	
284,553	327,578	311,311	275,869	238,919	227,692	297,286
1,084,909	1,072,526	1,066,013	1,066,070	1,054,505	1,077,891	1,045,597
405,953	381,554	365,071	363,608	333,423	321,965	323,288
1,083,298	1,105,537	1,043,123	1,093,505	1,117,906	1,228,096	1,222,835
4,694,876	4,380,777	4,434,194	4,258,034	4,257,033	4,296,862	4,289,625
1,266,082	2,675,969	2,473,950	2,501,517	1,969,668	1,699,407	1,846,747
753,507	501,007	436,681	393,364	545,255	290,121	

FINANCIAL STATEMENT—

Summary statement shewing for all Municipalities in Ontario (including counties, townships, liabilities for the ten years ending

Schedule.		1903.	1902.	1901.
		$	$	$
Loans repaid:				
Debentures redeemed (principal) .... School	*b*	179,700	208,271	166,868
Debentures redeemed (principal) .... All other	*a*	1,850,123	1,873,592	2,123,937
Interest on loans, advances and debentures	*a*	2,784,757	2,762,612	2,709,953
Refund of money borrowed for current expenses	*a*	7,677,580	6,596,080	6,660,448
Non-resident taxes paid	*d*	46,584	*34,835	40,847
Board of Health (including salaries)	*b*	214,381	238,717	198,002
Miscellaneous	*a*	970,947	1,120,184	1,063,770
Totals		36,345,300	32,447,438	31,745,746
ASSETS.				
Cash in treasury (exclusive of Sinking Funds)	*a*	1,736,751	2,046,125	1,578,195
Taxes in arrears	*b*	3,829,618	3,916,407	4,159,807
Rates due from local municipalities	*d*	527,890	482,437	610,246
Sinking Fund investments and deposits	*a*	12,099,680	11,044,845	10,442,683
Other investments and special deposits	*a*	4,070,337	3,698,117	3,835,209
Waterworks and electric light plant	*c*	18,981,162	17,804,397	16,995,522
†Other buildings and property	*a*	22,896,172	22,674,469	22,139,669
Miscellaneous	*a*	9,293,238	8,232,626	7,472,707
Totals		73,434,848	69,899,424	67,234,038
LIABILITIES.				
County levy	*g*	444,350	422,234	425,019
School rates and grants unpaid	*a*	609,447	590,801	541,491
Debentures outstanding (principal) for—				
Aid to railways	*a*	3,733,760	3,697,804	3,740,675
Schools	*b*	4,577,471	4,527,116	4,241,070
All other purposes	*a*	55,616,308	52,954,548	51,514,905
Loans for current expenses and interest due on same	*a*	5,178,828	4,670,123	4,190,162
Local municipalities for non-resident taxes	*d*	6,537	20,192	7,308
Miscellaneous	*a*	2,287,331	2,057,522	2,059,801
Totals		72,454,032	68,940,340	66,720,431

* Including $763 for liability not previously reported. † Exclusive of school property. (*a*) All municipalities: (*b*) townships, cities, towns and villages: (*c*) cities, towns and villages: (*d*) counties: (*e*) townships (*f*) counties, cities, towns and villages: (*g*) townships, towns and villages.

ONTARIO MUNICIPALITIES.

cities, towns and villages), the total of the several items of Receipts, Disbursements, Assets and December 31st, 1894-1903.

1900.	1899.	1898.	1897.	1896.	1895.	1894.
$	$	$	$	$	$	$
181,157	163,722	216,858	183,014	215,934	187,526	4,424,647
2,231,993	2,188,816	3,463,746	3,131,278	3,129,832	1,966,061	
2,652,749	2,508,955	2,633,762	2,553,988	2,588,759	2,578,220	2,552,607
5,429,438	6,057,300	4,689,474	4,301,229	4,411,493	5,201,538	5,992,779
42,272	70,386	66,343	83,313	75,288	112,915	94,583
128,250	118,111	100,750	102,430	92,312	97,534	952,200
821,020	691,539	714,200	893,234	906,026	796,930	
29,643,088	30,223,996	29,071,839	28,135,044	27,258,802	26,526,591	29,639,734
1,413,467	1,645,145	1,849,739	1,641,559	1,728,747	1,648,455	1,314,226
4,252,611	4,329,972	4,614,387	4,652,431	4,617,196	4,597,668	4,411,047
489,635	533,868	531,222	550,055	587,538	663,043	668,960
10,104,879	9,821,918	9,395,774	8,994,790	8,350,555	7,932,668	10,325,356
3,741,275	3,593,175	3,557,079	3,542,472	3,604,475	3,277,020	
16,203,624	15,312,773	16,085,883	14,137,268	13,720,675	13,464,113	32,694,526
21,986,563	21,600,123	19,974,122	20,912,711	20,736,433	20,635,993	
7,004,484	6,584,596	5,918,589	5,745,594	5,901,072	4,882,280	5,296,549
65,196,538	63,421,570	61,926,795	60,176,880	59,246,691	57,101,240	54,710,664
437,388	466,965	478,835	491,415	529,512	631,502	617,942
565,055	536,240	589,389	562,262	621,842	602,998	570,344
3,689,546	3,837,041	3,944,744	4,523,719	4,616,120	4,539,187	4,805,897
4,169,382	4,180,673	4,194,554	4,072,628	4,201,547	4,164,156	3,990,317
49,313,874	48,371,889	46,367,074	44,981,128	44,130,608	43,192,648	40,928,373
4,602,864	3,191,709	3,720,632	3,219,853	2,682,520	2,546,343	3,151,628
11,295	11,027	25,889	19,112	21,540	30,070	18,518
2,151,431	2,096,325	2,068,990	2,190,311	2,405,980	2,023,216	2,311,135
64,940,835	62,691,869	61,390,107	60,060,428	59,209,669	57,730,120	56,394,154

STATISTICS OF

ONTARIO MUNICIPALITIES

STATISTICS OF ONTARIO—

RECEIPTS, DISBURSEMENTS.

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
1. Adelaide, Middlesex	6,287	12,136	32		56	492	
2. Adjala, Simcoe	1,591	8,466	107			489	
3. Admaston, Renfrew	345	6,925	51			600	
4. Adolphustown, Lennox and Add.	369	2,974	2		120	130	
5. Albemarle, Bruce	90	4,654	66			700	875
6. Alberton, Rainy River	227	1,119				200	
7. Albion, Peel	104	11,026	87			1,900	
8. Aldborough, Elgin	1,474	24,584	413		441	13,138	100
9. Alfred, Prescott	56	9,737	237			500	
10. Algona, S. Renfrew	33	1,358	5				
11. Alice and Fraser, Renfrew	23	3,419		248	18		
12. Alnwick, Northumberland	173	3,343	78			800	
13. Amabel, Bruce	2,708	11,151	104			250	
14. Amaranth, Dufferin	213	14,336	9			1,500	925
15. Ameliasburg, Prince Edward		11,165	17	370	825		
16. Amherst Island, Lennox and Add.	16	3,605	27				
17. Ancaster, Wentworth	1,716	18,546	2,480	*12,300	1,170		
18. Anderdon, Essex	601	5,804	32			2,800	
19. Anson and Hindon, Haliburton	56	845	14				
20. Armour, Parry Sound	1,224	1,959	3				
21. Arran, Bruce	1,685	9,748	40	18	23		1,500
22. Artemesia, Grey	431	14,270	159		86	2,500	1,500
23. Arthur, Wellington	1,334	12,287	35		17	1,500	
24. Ashfield, Huron	697	12,577	165	356	4	1,300	
25. Asphodel, Peterboro'	47	9,123	44			1,600	
26. Assiginack, Manitoulin	548	3,087	137				
27. Athol, Prince Edward	60	3,941		230	177		
28. Atwood, Rainy River		2,477				2,000	
29. Augusta, Grenville	2,795	14,403	775		654	3,000	
30. Bagot and Blithefield, Renfrew	999	3,296	100				
31. Balfour, Algoma	695	2,106	242			2,275	
32. Bangor, Wicklow & McClure, Hastings		2,117	20			23	1,040
33. Barrie, Frontenac	69	1,264	53				300
34. Barton, Wentworth	3,482	11,604	182	373	955		
35. Bastard and Burgess, S. Leeds	774	12,329	134		1,160		
36. Bathurst, Lanark	697	8,653	2		43		
37. Bayham, Elgin	5,364	19,532	387			22,000	
38. Beckwith, Lanark	487	6,345	96		345	496	
39. Bedford, Frontenac	639	5,089	64			210	500
40. Belmont & Methuen, Peterborough	183	6,558	36				1,600
41. Bentinck, Grey	153	11,145	49		27		
42. Bertie, Welland	1,951	14,650	547			500	
43. Beverly, Wentworth		14,457	146	3,485	552	271	
44. Bexley, Victoria	134	4,150	42		97		
45. Biddulph, Middlesex	3,112	11,071	113			2,000	
46. Billings, Manitoulin	235	1,057	16				
47. Binbrook, Wentworth	1,340	6,250	2				
48. Blandford, Oxford	1,936	8,636	174		50		2,319
49. Blanshard, Perth	4,164	14,500			23	3,859	
50. Blenheim, Oxford	536	21,100	781		4	2,500	
51. Blind River, Algoma	14	3,135	312			1,361	
52. Bonfield, Nipissing	173	3,019	34			800	

* Including $10,000 proceeds of Ancaster Road to County.

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
26	19,029	920	191	2,104	.....	38	4,199	4,161	12	.....	1
181	10,834	602	214	996	.....	79	4,341	3,407	.....	.....	2
112	8,033	296	164	543	.....	29	1,121	3,663	.....	.....	3
....	3,595	179	44	254	230	146	1,105	1,305	.....	.....	4
39	6,424	600	175	1,042	.....	.....	352	2,793	.....	.....	5
....	1,546	153	59	496	.....	5	.....	320	.....	.....	6
129	13,246	687	336	1,701	.....	5	2,410	5,105	.....	.....	7
501	40,651	1,279	1,181	7,731	.....	153	3,762	7,597	2,444	1,167	8
67	10,597	491	110	897	.....	38	1,174	4,989	454	.....	9
....	1,396	197	50	26	.....	.....	100	704	.....	.....	10
149	3,857	344	73	271	89	.....	482	2,162	.....	18	11
67	4,461	424	91	1,037	150	17	512	1,353	.....	.....	12
86	14,299	628	284	702	250	22	35	5,300	.....	.....	13
42	17,025	480	331	1,644	.....	.....	1,820	6,033	630	.....	14
26	12,403	542	364	600	.....	537	2,040	5,314	.....	504	15
....	3,648	90	43	191	.....	265	500	1,879	.....	.....	16
4	36,216	1,140	724	4,967	.....	471	3,906	8,023	.....	2,931	17
334	9,571	449	462	1,156	.....	153	974	917	382	.....	18
164	1,079	151	46	84	.....	5	105	538	.....	.....	19
54	3,240	293	76	167	.....	5	.....	1,367	.....	.....	20
104	13,118	686	214	1,121	.....	13	2,456	6,182	.....	.....	21
9	18,955	819	277	2,184	.....	232	1,721	8,190	.....	559	22
102	15,275	859	194	1,882	119	5	3,710	5,196	21	.....	23
207	15,306	754	156	2,080	.....	38	2,199	6,332	57	.....	24
....	10,814	386	147	1,645	.....	148	2,713	3,439	.....	107	25
....	3,772	274	102	426	.....	73	.....	2,137	.....	.....	26
....	4,408	123	164	90	230	251	871	2,460	.....	.....	27
....	4,477	330	357	1,794	150	.....	.....	600	.....	.....	28
39	21,666	971	*3,484	3,327	.....	168	2,862	7,315	75	347	29
35	4,430	355	100	528	.....	40	366	1,949	.....	.....	30
....	5,318	482	46	408	.....	20	.....	1,124	.....	.....	31
391	3,591	302	35	291	.....	34	225	2,234	.....	.....	32
....	1,686	201	44	154	.....	8	224	644	.....	.....	33
....	16,596	1,266	445	2,016	.....	123	2,063	4,358	.....	1,107	34
705	15,102	641	288	1,296	247	.....	1,993	5,640	.....	1,539	35
2	9,397	520	200	480	.....	32	2,111	4,481	60	.....	36
552	47,835	1,005	506	3,613	.....	128	2,272	7,488	384	.....	37
22	7,791	494	492	822	125	12	1,584	3,389	.....	.....	38
33	6,535	291	553	462	....	21	1,359	3,177	.....	.....	39
332	8,709	504	168	1,180	.....	77	756	5,080	.....	.....	40
358	11,732	531	241	1,993	.....	64	1,969	5,030	.....	.....	41
881	18,529	762	375	5,797	.....	69	3,448	4,141	15	.....	42
7	18,918	1,033	442	1,379	.....	304	4,511	6,996	.....	3,414	43
8	4,431	295	100	271	.....	21	289	2,203	.....	542	44
136	16,432	689	170	2,694	.....	121	2,216	3,670	.....	.....	45
....	1,308	175	31	117	.....	5	.....	769	.....	.....	46
163	7,755	399	126	1,077	.....	180	1,525	2,436	.....	.....	47
79	13,194	662	119	1,498	.....	5	2,071	2,658	834	.....	48
512	23,058	863	413	5,626	.....	107	3,945	4,475	54	.....	49
229	25,150	1,050	294	4,041	.....	111	5,363	9,165	11	153	50
161	4,983	444	651	745	.....	16	.....	300	.....	261	51
77	4,103	333	233	742	.....	62	.....	2,014	.....	.....	52

* Including $3,060 for law costs.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
1. Adelaide	253	492	48	144	12,562	6,467	.....
2. Adjala	.....	489	11	59	10,198	636	795
3. Admaston	.....	500	12	133	6,461	1,572	1,225
4. Adolphustown	.....	.....	.....	10	3,273	322	.....
5. Albemarle	.....	1,030	80	284	6,356	68	4,503
6. Alberton	.....	200	4	3	1,240	306	285
7. Albion	101	1,900	161	82	12,488	758	.....
8. Aldborough	2,000	9,200	2,224	*1,777	40,515	136	21,074
9. Alfred	118	1,125	168	924	10,488	109	4,389
10. Algona	154	.....	36	19	1,286	110	661
11. Alice and Fraser	300	.....	15	95	3,849	8	965
12. Alnwick	.....	800	22	53	4 459	2	62
13. Amabel	1,307	100	1,025	†2,624	12,277	2,022	4,535
14. Amaranth	2,693	1,500	447	120	15,698	1,327	622
15. Ameliasburg	478	957	868	156	12,360	43	1,400
16. Amherst Island	.....	135	29	93	3,225	423	1,206
17. Ancaster	.....	.....	.....	‡3,809	25,971	10,245	3,605
18. Anderdon	837	3,500	354	285	9,469	102	9,173
19. Anson and Hindon	48	.....	6	50	1,033	46	682
20. Armour	.....	.....	.....	77	1,975	1,265	2,057
21. Arran	.....	.....	.....	121	10,793	2.325	13
22. Artemesia	.....	2,500	393	82	16,957	1,998	126
23. Arthur	503	1,500	130	361	14,420	855	.....
24. Ashfield	834	1,300	163	365	14,278	1,028	4,047
25. Asphodel	.....	1,600	225	195	10,605	209	232
26. Assiginack	.....	.....	.....	113	3,125	647	212
27. Athol	.....	.....	.....	6	4,195	213	230
28. Atwood	.....	300	.....	36	3,567	910	1,394
29. Augusta	.....	750	218	123	19,640	2,026	4,624
30. Bagot & Blithefield	.....	.....	.....	9	3,347	1,083	599
31. Balfour	.....	2,300	44	374	4,798	520	1,465
32. Bangor, Wicklow and McClure	.....	336	20	114	3,591	.....	2,247
33. Barrie	68	323	4	2	1,672	14	900
34. Barton	1,000	.....	400	460	13,238	3,358	1,231
35. Bastard & Burgess	.....	.....	1,150	139	12.933	2,169	33
36. Bathurst	.....	.....	.....	407	8,291	1,106	489
37. Bayham	2,049	24,000	1,909	299	43,653	4.182	9,387
38. Beckwith	.....	496	4	11	7,429	362	8
39. Bedford	49	200	55	368	6,535	.....	1,690
40. Belmont & Bethune	136	.....	82	147	8,130	579	2,866
41. Bentinck	82	.....	79	85	10,074	1,658	1,692
42. Bertie	648	500	226	301	16,282	2,247	2,835
43. Beverly	.....	230	9	600	18,918	.....	3,149
44. Bexley	.....	.....	375	62	4,158	273	1,676
45. Biddulph	360	2,000	131	42	12,093	4,339	105
46. Billings	.....	.....	.....	87	1,184	124	1,223
47. Binbrook	110	.....	45	268	6,166	1,589	379
48. Blandford	542	.....	153	83	8,625	4,569	4
49. Blanshard	.....	3,859	72	247	19,661	3,397	200
50. Blenheim	673	2,500	460	233	24,034	1,116	252
51. Blind River	.....	600	269	586	3,872	1,111	1,413
52. Bonfield	.....	500	43	68	3,995	108	2,994

* Including $674 paid to other municipalities as share of debt.
† Including $2,509 cash destroyed by fire in Treasurer's office.
‡ Including $3,206 transferred to C. R. fund.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	2,069	8,536	4,214	545	.....	.....	4,759	1
.....	.....	1,431	.....	.....	.....	145	145	2
.....	727	3,524	1,289	.....	600	170	2,059	3
3,000	430	3,752	.....	.....	130	.....	130	4
.....	3,314	7,885	1,459	875	715	721	3,770	5
.....	.....	591	4	.....	.....	.....	4	6
.....	3,702	4,460	.....	2,702	.....	115	2,817	7
7,634	24,517	53,361	4,872	39,886	16,857	1,420	63,035	8
.....	636	5,134	2,506	236	1,475	25	4,242	9
.....	804	1,575	585	454	.....	117	1,156	10
.....	43	1,016	437	.....	.....	266	703	11
.....	917	981	.....	.....	.....	.....	.....	12
.....	2,320	8,877	2,626	21,116	150	.....	23,892	13
.....	1,400	3,349	.....	5,424	.....	516	5,940	14
34,886	7,047	43,376	.....	16,022	.....	143	16,165	15
.....	225	1,854	663	.....	600	75	1,338	16
*27,783	5,597	47,230	.....	.....	5,050	.....	5,050	17
.....	1,899	11,174	4,274	6,347	2,579	793	13,993	18
.....	529	1,257	1,023	50	.....	194	1,267	19
.... .	112	3,434	1,579	.....	.....	1,182	2,761	20
.....	2,338	4,676	.....	1,500	.....	4	1,504	21
4,08-	9,210	15,416	169	8,400	.....	.....	8,569	22
.... .	2,704	3,559	.....	1,425	.....	.....	1,425	23
.....	1,402	6,477	2,199	1,302	.....	190	3,691	24
2,912	4,866	8,219	.....	3,166	.....	1,415	4,581	25
.....	659	1,518	.....	.....	.....	.....	.....	26
2,020	1,250	3,713	.....	.....	.....	.....	.....	27
.....	150	2,454	.....	.....	1,700	.....	1,700	28
17,531	3,000	27,181	2,862	3,200	3,000	.....	9,062	29
.....	1,000	2,682	422	.....	.....	337	759	30
..... .	682	2,667	810	.....	586	76	1,472	31
... .	1,265	3,512	1,791	1,040	23	334	3,188	32
.....	300	1,214	598	232	.....	62	892	33
16,16	6,221	26,973	287	6,090	.....	647	6,934	34
31,334	2,000	35,536	.....	23,000	.....	150	23,150	35
780	600	2,975	.....	.....	.....	.....	.....	36
.....	1,967	15,536	3,480	30,083	8,000	242	41,805	37
8,330	350	9,050	.....	.....	.....	.....	.....	38
.....	1,068	2,758	1,339	1,068	10	219	2,636	39
.....	2,817	6,262	1,023	2,817	.....	50	3,890	40
.....	1,511	4,861	.....	1,511	.....	.....	1,511	41
.....	9,479	14,561	1,164	3,751	.....	616	5,531	42
13,780	3,500	20,429	.....	.....	271	.....	271	43
3,394	887	6,230	533	7,500	.....	50	8,083	44
.....	1,368	5,812	2,137	540	.....	78	2,755	45
.....	2	1,349	336	.....	.....	185	521	46
.....	1,340	3,308	.....	790	.....	.....	790	47
.....	130	4,703	.....	5,601	.....	.....	5,601	48
.....	1,244	4,841	3,945	.....	.....	105	4,050	49
133	7,624	9,125	.....	7,332	.....	.....	7,332	50
261	4,739	7,524	.....	5,000	1,093	.....	6,093	51
.....	81	3,183	1,786	.....	723	329	2,838	52

* Omit $10,000, depreciation in value of stock in roads.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
53. Bosanquet, Lambton	787	15,761	36			2,900	1,430
54. Brant, Bruce	499	16,178	203	4,719	189		1,800
55. Brantford, Brant	1,234	27,196	170	4,000	2,924		2,250
56. Brighton, Northumberland	1,525	9,540	1			450	
57. Brock, Ontario	964	16,214	115			4,000	
58. Bromley, Renfrew	690	6,758	212			1,000	
59. Brooke, Lambton	1,031	33,027	45		198	8,196	15,171
60. Brougham, Renfrew	170	902	40				
61. Bruce, Bruce	432	14,243	63	2,156	78	3,000	
62. Brudenell & Lynedoch, Renfrew	878	3,178	40				
63. Brunel, Muskoka	712	1,674	50				
64. Bucke, Nipissing		572				100	
65. Burford, Brant	3,641	19,647	20		123		
66. Burgess N., Lanark	320	2,971					
67. Burleigh & Anstruther, Peterboro'	306	2,386	37			706	
68. Burpee, Manitoulin	10	985		408	11		
69. Caistor, Lincoln	44	6,809	1			600	
70. Caldwell, Nipissing	165	2,357	229			600	
71. Caledon, Peel	134	19,124	299		15	8,000	
72. Caledonia, Prescott	220	6,436	95				
73. Calvin, Nipissing	2	1,386				600	
74. Cambridge, Russell	1,594	12,022	195	1,462	1,037	1,205	12,247
75. Camden, Kent	1,598	14,116	47			947	1,870
76. Camden East, Lennox & Addingt'n	834	19,584	212		6	1,476	
77. Cameron, Nipissing	36	346				100	
78. Canborough, Haldimand	634	3,499	7				
79. Caradoc, Middlesex	5,670	22,287	58				388
80. Carden, Victoria	80	2,257		400	7		
81. Cardiff, Haliburton	30	3,041				400	
82. Cardwell, Muskoka	1,073	1,747	10				
83. Carling, Parry Sound	166	1,114				600	600
84. Carlow, Hastings	444	2,501				265	
85. Carnarvon, Manitoulin	761	995	21		13		
86. Carrick, Bruce	1,158	15,432	303		241	350	
87. Cartwright, Durham	29	4,835	87			1,400	
88. Cavan, Durham	1,703	13,755	110				
89. Cayuga N., Haldimand	27	6,326	61		1	300	
90. Cayuga S., Haldimand	242	4,082					
91. Chaffey, Muskoka	215	3,081	16				
92. Chandos, Peterborough	410	1,961					
93. Chapleau, Algoma	134	2,410	292				4,500
94. Chapman, Parry Sound	1,093	1,184	38				
95. Chapple, Rainy River	204	983	38				500
96. Charlottenburg, Glengarry		20,887	722			1,709	
97. Charlotteville, Norfolk	542	12,733	31		471	1,539	
98. Chatham, Kent	1,024	40,981	112			29,927	774
99. Chinguacousy, Peel		18,445	205	7,607	1,354	1,422	
100. Christie, Parry Sound	908	1,165	52				
101. Clarence, Russell	505	18,469	295			3,000	1,300
102. Clarendon and Miller, Frontenac	130	1,959	5				
103. Clarke, Durham	171	14,915	285				700
104. Clinton, Lincoln	359	11,013			15	4,600	2,700

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
260	21,174	1,049	290	3,807	.....	99	2,680	6,591	1,099	.....	53
415	24,003	813	401	4,626	.....	43	3,787	8,492	.....	4,641	54
587	38,361	2,229	710	4,002	.....	1,161	4,102	12,438	.....	4,000	55
136	11,652	618	252	1,266	.....	153	1,682	5,138	.....	.....	56
49	21,342	1,194	198	3,270	.....	862	3,518	6,293	.....	.....	57
7	8,667	422	127	1,188	.....	.....	1,645	3,043	206	.....	58
641	58,309	674	693	7,320	.....	380	2,880	9,221	2,704	.....	59
4	1,116	165	35	.....	.....	.....	110	500	.....	.....	60
528	20,500	681	240	3,780	.....	33	2,886	4,756	.....	2,316	61
135	4,231	303	47	121	.....	76	384	3,016	.....	.....	62
1	2,437	241	85	776	32	39	.....	1,012	.....	.....	63
12	684	137	41	35	.....	.....	.....	125	.....	.....	64
119	23,550	901	309	5,284	.....	622	3,284	8,578	374	69	65
2	3,293	270	144	211	.....	.....	592	1,580	.....	.....	66
311	3,746	299	127	122	.....	.....	.....	1,042	.....	.....	67
.....	1,414	103	76	11	63	.....	.....	513	.....	.....	68
39	7,493	336	140	456	.....	14	1,764	2,783	.....	.....	69
.....	3,351	209	145	348	.....	3	.....	1,026	10	.....	76
260	27,832	845	1,625	4,057	.....	241	2,930	7,522	.....	.....	71
126	6,877	573	361	670	.....	15	1,022	3,520	.....	.....	72
.....	1,988	228	99	296	.....	20	.....	624	37	.....	73
270	30,032	754	468	2,902	.....	40	1,184	4,448	.....	.....	74
.....	18,578	880	238	1,435	.....	240	1,720	4,445	2,040	.....	75
2	22,114	944	468	3,494	.....	363	5,670	8,795	.....	.....	76
.....	482	95	14	37	.....	.....	.....	145	.....	.....	77
.....	4,140	285	63	547	.....	138	1,133	1,784	.....	.....	78
200	28,603	1,004	365	4,000	.....	88	4,900	6,606	697	.....	79
30	2,774	231	52	197	.....	62	299	1,264	.....	.....	80
198	3,669	272	36	102	.....	38	500	1,216	.....	.....	81
8	2,838	322	84	409	.....	43	.....	708	.....	.....	82
.....	2,480	103	104	54	.....	23	.....	805	.....	.....	83
232	3,442	236	81	553	.....	.....	186	1,107	.....	.....	84
.....	1,790	173	51	231	.....	.....	.....	1,011	.....	.....	85
.....	17,484	593	520	1,219	.....	42	3,426	9,004	.....	490	86
.....	6,351	395	346	779	.....	139	1,368	3,004	.....	.....	87
95	15,663	983	139	4,894	.....	57	2,480	5,517	.....	.....	88
.....	6,715	275	102	248	.....	6	1,862	3,123	.....	.....	89
.....	4,324	164	18	86	.....	94	900	2,706	.....	.....	90
35	3,347	409	59	845	.....	5	.....	1,311	.....	.....	91
.....	2,371	285	62	80	.....	34	314	927	.....	.....	92
25	7,361	146	120	374	.....	.....	.....	5,930	.....	.....	93
2	2,317	250	204	169	.....	.....	.....	720	.....	.....	94
4	1,729	240	71	136	37	.....	.....	1,050	.....	.....	95
14	23,332	997	486	4,763	.....	19	2,435	9,422	606	.....	96
.....	15,316	766	387	1,959	.....	92	1,995	5,698	6	.....	97
525	73,343	3,677	1,043	2,320	.....	948	4,913	9,959	2,695	.....	98
138	29,171	1,117	576	5,150	.....	65	5,921	8,276	.....	7,555	99
206	2,331	268	60	588	.....	43	.....	569	77	.....	100
167	23,736	800	614	1,192	.....	20	1,887	8,193	454	.....	101
15	2,109	152	97	139	.....	15	287	1,204	.....	.....	102
5	16,076	976	441	3,014	.....	417	2,000	8,232	.....	.....	103
131	18,818	460	537	1,831	.....	.....	4,028	6,634	.....	.....	104

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
53. Bosanquet	1,440	2,900	307	395	20,657	517	200
54. Brant	67	.....	80	628	23,578	425	1,205
55. Brantford	1,059	.....	774	634	31,109	7,252	1,645
56. Brighton	.....	450	9	186	9,754	1,898	13
57. Brock	120	4,000	165	718	20,338	1,004	69
58. Bromley	.....	600	19	658	7,908	759	1,150
59. Brooke	9,263	14,082	3,138	93	50,448	7,861	10,259
60. Brougham	.....	100	.....	18	928	188	376
61. Bruce	150	3,000	289	649	18,780	1,720	.....
62. Brudenell	.....	.....	.....	38	3,985	246	655
63. Brunel	100	.....	6	39	2,330	107	1,965
64. Bucke	.....	100	6	25	469	215	136
65. Burford	554	.....	95	531	20,601	2,949	.....
66. Burgess N.	.....	400	10	4	3,211	82	210
67. Burleigh and Anstruther	242	1,406	116	176	3,530	216	171
68. Burpee	300	60	120	116	1,362	52	569
69. Caistor	.....	600	21	135	6,249	1,244	900
70. Caldwell	76	813	40	174	2,844	507	1,485
71. Caledon	.....	10,198	73	154	27,645	187	1,487
72. Caledonia	71	335	141	63	6,771	106	4,421
73. Calvin	100	300	29	46	1,779	209	957
74. Cambridge	3,235	14,487	478	768	28,764	1,268	1,671
75. Camden	3,860	2,500	812	374	18,544	34	8,253
76. Camden East	90	1,476	51	326	21,677	437	970
77. Cameron	.....	100	5	.....	396	86	379
78. Canborough	.....	.....	.....	94	4,044	96	483
79. Caradoc	1,932	.....	283	734	20,609	7,994	1,947
80. Carden	50	444	69	63	2,731	43	457
81. Cardiff	111	881	101	17	3,274	395	751
82. Cardwell	.....	.....	.....	58	1,624	1,214	900
83. Carling	.....	500	5	12	1,606	874	1,635
84. Carlow	132	523	34	18	2,870	572	1,656
85. Carnarvon	172	.....	62	10	1,710	80	1,531
86. Carrick	.....	350	365	196	16,205	1,279	61
87. Cartwright	174	.....	27	86	6,318	33	1,470
88. Cavan	.....	.....	97	375	14,542	1,121	502
89. Cayuga N.	.....	300	8	421	6,345	370	137
90. Cayuga S	.....	.....	.....	7	3,975	349	56
91. Chaffey	272	.....	46	224	3,171	176	3,473
92. Chandos	.....	.....	.....	139	1,841	530	1,595
93. Chapleau	136	.....	270	184	7,160	201	106
94. Chapman	.....	.....	.....	55	1,398	919	688
95. Chapple	100	.....	15	53	1,702	27	2,421
96. Charlottenburg	1,024	1,728	629	1,223	23,332	.....	7,746
97. Charlotteville	1,487	1,539	474	588	14,991	325	756
98. Chatham	12,862	27,530	4,639	*1,736	72,322	1,021	36,582
99. Chinguacousy	260	.....	82	169	29,171	.....	404
100. Christie	100	.....	30	164	1,899	432	1,155
101. Clarence	388	5,500	289	†2,419	21,756	1,980	3,502
102. Clarendon and Miller	.....	63	2	25	1,984	125	1,661
103. Clarke	573	.....	67	244	15,964	112	3,442
104. Clinton	.....	4,600	99	219	18,408	410	669

* Including $948 Board of Health, of which about $850 were on account of small-pox.
† Including $815 Board of Health and $1000 paid to Cumberland Tp. as share of drainage debt.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	6,884	7,601	.....	6,264	.....	730	6,994	53
6,589	3,733	11,952	.....	3,733	.....	174	3,907	54
68,742	13,799	91,438	318	12,833	.....	4,719	17,870	55
.....	700	2,611	.....	.....	.....	.....	.....	56
.....	2,890	3,963	136	1,073	.....	120	1,329	57
.....	700	2,609	495	.....	400	.....	895	58
.....	4,065	22,185	.....	33,868	.....	430	34,298	59
.....	.....	564	110	.....	218	12	340	60
2,316	7,330	11,366	.....	6,130	.....	380	6,510	61
.....	650	1,551	138	.....	.....	.....	138	62
.....	700	2,772	950	.....	.....	.....	950	63
.....	40	391	100	.....	.....	70	170	64
2,361	550	5,860	.....	1,910	.....	1,298	3,208	65
.....	698	990	101	.....	.....	74	175	66
.....	669	1,056	150	1,234	.....	.....	1,384	67
12	.....	633	236	1,700	.....	.....	1,936	68
.....	1,000	3,144	1,664	.....	.....	.....	1,664	69
.....	749	2,741	678	449	314	96	1,537	70
.....	2,000	3,674	.....	.....	.....	.....	.....	71
.....	1,362	5,889	2,153	835	588	1,277	4,853	72
.....	252	1,418	661	200	308	6	1,175	73
.....	2,295	5,234	1,055	12,845	925	490	15,315	74
.....	3,964	12,251	1,872	16,795	947	1,150	20,764	75
.....	955	2,362	.....	355	.....	164	519	76
.....	.....	465	150	.....	.....	50	200	77
.....	.....	579	.....	.....	.....	.....	.....	78
.....	5,075	15,016	4,918	6,467	.....	134	11,519	79
.....	500	1,000	262	500	229	56	1,047	80
.....	529	1,675	401	529	.....	.....	930	81
.....	.....	2,114	845	.....	.....	276	1,121	82
.....	600	3,109	853	600	600	34	2,087	83
.....	285	2,513	1,457	210	276	215	2,158	84
.....	1,219	2,830	710	1,119	.....	.....	1,829	85
4,540	4,950	10,830	.....	7,200	.....	50	7,250	86
.....	2,699	4,202	.....	5,206	1,449	.....	6,655	87
.....	6,520	8,143	.....	.....	.....	1,172	1,172	88
.....	238	745	36	.....	.....	49	85	89
.....	1,200	1,605	.....	.....	.....	.....	.....	90
.....	666	4,315	.....	666	.....	.....	666	91
.....	.....	2,125	1,150	.....	.....	513	1,663	92
.....	4,364	4,671	.....	4,364	.....	307	4,671	93
.....	310	1,917	775	.....	.....	111	886	94
.....	750	3,198	792	700	.....	93	1,585	95
.....	7,450	15,196	3,269	12,855	70	1,735	18,508	96
8,764	600	10,445	.....	7,564	.....	.....	7,564	97
.....	67,053	104,656	7,162	64,816	29,927	.....	101,905	98
32,654	2,120	35,178	.....	1,120	1,796	.....	2,916	99
.....	1,080	2,637	100	400	.....	.....	500	100
.....	1,018	6,500	6,620	1,932	.....	.....	8,552	101
.....	.....	1,786	230	.....	191	64	485	10
.....	6,700	10,254	666	1,360	.....	90	2,116	103
.....	428	1,507	740	2,700	.....	191	3,631	104

STATISTICS OF ONTARIO—

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
105. Cockburn, Manitoulin	139	698					
106. Colborne, Huron	13	8,207	41			1,500	
107. Colchester N., Essex	460	17,643	9		46		1,943
108. Colchester S., Essex	1,800	17,054	336			1,500	1,855
109. Collingwood, Grey	318	15,585	36			3,123	
110. Cornwall, Stormont	283	17,476	378			4,300	6,221
111. Cramahe, Northumberland	322	9,005	47			538	
112. Crosby N., Leeds	693	6,456	70		150	2,760	
113. Crosby S., Leeds	1,543	6,254	66	572	319		
114. Crowland, Welland	1,314	4,465	31				
115. Culross, Bruce	1,492	10,900	80		9	100	
116. Cumberland, Russell	70	14,960	187			1,000	3,178
117. Dalhousie, Sherbrooke N., Lanark.	731	4,669	75				
118. Dalton, Victoria	387	1,339					
119. Darling, Lanark	227	1,500			14	50	
120. Darlington, Durham	4,925	19,506	7			1,450	
121. Dawn, Lambton	2,284	23,908	47				100
122. Delaware, Middlesex	827	6,485	26		21		
123. Denbigh, Ab.&Ash., Lennox&Add	46	1,525					
124. Derby, Grey	424	9,063	14		2	2,450	
125. Dereham, Oxford	2,995	25,838	630		300	2,911	
126. Dorchester N., Middlesex	4,305	17,419	104		341	2,000	
127. Dorchester S., Elgin		11,359					
128. Douro, Peterborough	422	7,049				1,000	
129. Dover, Kent	3,189	31,067	479		36		
130. Downie, Perth	2,323	17,391	117		41	3,300	
131. Draper, Muskoka	656	2,795	37				
132. Drummond, Lanark	25	9,379	63			1,100	
133. Drury, Denison, Graham, Algoma.	1,669	1,222	286		17	2,873	
134. Dumfries N., Waterloo	948	9,027	115			700	
135. Dumfries S., Brant	1,898	15,682	101		17	1,800	
136. Dummer, Peterborough	190	6,136	13		23	600	
137. Dungannon, Hastings	165	2,035	17				
138. Dunn, Haldimand	608	3,351	37		5		
139. Dunwich, Elgin	1,448	25,109	61		21	7,000	
140. Dymond, Nipissing	196	1,708	44				
141. Dysart, Guilford, etc., Haliburton.	1,319	5,447	36			800	
142. Easthope N., Perth	4,930	13,305	77		28		2,352
143. Easthope S., Perth	824	8,299	197		1	1,952	
144. Eastnor, Bruce	316	5,983	292	882	43	2,187	10,000
145. Edwardsburg, Grenville	113	12,700	96		692	714	
146. Egremont, Grey	2,721	10,683	54		47		
147. Ekfrid, Middlesex	1,970	18,522	48			2,000	
148. Elderslie, Bruce	614	11,247	12			1,610	2,600
149. Eldon, Victoria	744	11,558	176	64	232	1,700	
150. Elizabethtown, Leeds	1,633	18,115	2,140	8,463	252		
151. Ellice, Perth	2,329	21,659	195		44	12,400	1,622
152. Elma, Perth	14,114	23,740	147		254		5,972
153. Emsley N., Lanark	674	3,717	6				
154. Emsley S., Leeds	686	4,032	210		5		
155. Elzevir & Grimsthorpe, Hastings		3,675	45			307	
156. Emily, Victoria	610	10,277				1,500	

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
.....	837	158	63	28	28	5	.....	341	.....	.....	105
51	9,812	513	274	1,823	.....	10	1,480	3,759	.....	.....	106
*2,129	22,236	828	1,223	1,864	.....	149	1,455	3,765	2,229	.....	107
367	22,912	822	575	2,751	1,200	77	1,891	5,727	2,625	.....	108
98	19,160	1,039	190	3,514	53	447	2,035	6,672	.....	.....	109
918	29,576	845	602	4,174	.....	538	1,837	10,050	773	.....	110
16	9,928	647	347	1,390	.....	197	1,555	4,947	.....	.....	111
30	10,159	391	97	638	.....	2	792	2,998	.....	521	112
.....	8,754	396	87	722	.....	15	878	3,708	.....	936	113
.....	5,810	240	133	615	.....	.....	1,491	2,372	.....	.....	114
400	12,981	649	236	2,223	.....	24	2,710	5,591	26	.....	115
1,505	20,900	850	281	3,476	.....	66	1,898	5,544	4,345	.....	116
44	5,519	350	55	432	.....	.....	651	2,960	.....	.....	117
.....	1,726	188	18	199	.....	5	125	847	.....	.....	118
8	1,799	119	14	42	.....	51	184	889	.....	.....	119
540	26,428	903	331	3,197	.....	412	7,595	9,336	.....	.....	120
2	26,341	1,085	373	4,183	.....	349	1,925	5,958	3,942	.....	121
100	7,459	543	213	860	.....	87	2,222	2,611	10	.....	122
17	1,588	183	58	60	.....	3	155	854	.....	.....	123
27	11,980	536	228	2,386	980	273	1,071	3,274	.....	.....	124
255	32,929	1,347	1,454	4,357	.....	65	5,212	7,674	6,609	.....	125
304	24,473	944	429	3,637	.....	6	4,669	6,252	862	.....	126
.....	11,359	719	202	2,977	.....	.....	2,750	3,250	113	.....	127
227	8,698	405	147	1,337	.....	81	2,196	2,836	.....	.....	128
229	35,000	1,308	940	514	35	167	3,408	6,515	2,915	.....	129
392	23,564	843	189	5,086	.....	190	3,771	4,826	647	.....	130
330	3,818	351	68	1,699	.....	14	.....	1,098	.....	.....	131
200	10,767	454	242	2,092	.....	31	2,181	3,499	.....	.....	132
.....	6,067	525	80	468	41	19	.....	1,562	.....	17	133
15	10,805	716	192	1,492	.....	4	2,628	4,535	.....	.....	134
103	19,601	843	357	3,592	100	380	2,668	6,122	30	.....	135
9	6,971	457	155	885	.....	119	1,525	2,596	.....	.....	136
220	2,437	240	40	182	.....	.....	150	1,357	.....	.....	137
.....	4,001	224	35	159	42	119	1,073	1,639	.....	.....	138
906	34,545	1,009	845	5,553	.....	32	4,174	5,358	1,248	.....	139
.....	1,948	51	141	173	.....	.....	.....	1,083	.....	.....	140
645	8,247	385	146	1,407	155	47	1,150	2,322	.....	.....	141
328	21,020	700	186	1,770	.....	228	3,284	4,312	1,664	.....	142
209	11,482	602	206	2,300	.....	25	1,969	3,262	358	.....	143
1,204	20,907	431	695	834	204	45	1,119	2,843	1,154	3,938	144
.....	14,315	735	453	1,356	.....	40	2,609	8,458	308	.....	145
622	14,127	507	250	2,585	.....	114	2,035	5,220	.....	.....	146
1,152	23,692	842	172	3,894	.....	13	4,594	6,148	310	.....	147
9	16,092	525	135	2,681	.....	5	2,601	7,522	.....	.....	148
230	14,704	618	309	1,772	.....	331	.....	4,262	170	2,184	149
†2,170	32,773	1,135	1,780	8,603	.....	149	.....	8,101	.....	6,282	150
‡6,292	44,541	1,136	981	3,509	.....	266	3,180	5,182	750	.....	151
‖3,771	47,998	973	4,349	4,175	.....	125	4,353	6,397	7,904	.....	152
1	4,398	228	109	639	.....	2	894	1,830	48	.....	153
.....	4,933	299	59	1,205	.....	19	1,417	1,793	.....	.....	154
492	4,519	414	86	476	25	84	629	2,133	.....	.....	155
12	12,399	777	120	1,865	.....	289	2,590	4,387	.....	.....	15

* Including $1,034 for law costs from Gosfield North.
† Including $1,104 from other municipalities as share of debt and $972 from Tp. of Augusta for law costs.
‡ Including $5,970 from other municipalities as share of debt.
‖ Including $3,216 from other municipalities as share of debt.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1902.—*Continued.*						Assets on
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
105. Cockburn Island				60	683	154	1,265
106. Colborne		1,500	108	247	9,714	98	1,479
107. Colchester N.	4,440	3,000	1,441	502	20,896	1,334	13.502
108. Colchester S	4,120		933	366	21,087	1,825	11,303
109. Collingwood	118	3,123	169	357	17,717	1,443	388
110. Cornwall	659	606	657	*6,140	26,881	2,695	3,755
111. Cramahe				845	9,928		2,826
112. Crosby N	93	2,300	752	†1,575	10,159		2,571
113. Crosby S	66		232	37	7,077	1,677	
114. Crowland				61	4,912	898	1,099
115. Culross	81	100	51	103	11,794	1,187	394
116. Cumberland	668	1,000	365	757	19,250	1,650	10,992
117. Dalhousie, Sherbrooke N				101	4,549	970	232
118. Dalton				6	1,388	338	546
119. Darling		359	15	6	1,679	120	936
120. Darlington	136	1,450	71	300	23,731	2,697	
121. Dawn	5,860		987	991	25,653	688	20,087
122. Delaware	184		82	104	6,916	543	3,633
123. Denbigh, Ab. & Ash				29	1,342	246	1,552
124. Derby	60	2,450	53	191	11,502	478	27
125. Dereham	4,342		1,418	451	32,929		35
126. Dorchester N		2,000	43	398	19,240	5.233	2,301
127. Dorchester S		197	90	164	10,462	897	302
128. Douro	119	1,000	38	101	8,260	438	240
129. Dover	10,056		2,406	‡4,463	32.727	2,273	9,430
130. Downie	1,036	3,300	403	130	20,421	3,143	97
131. Draper	90		18	192	3,530	288	2,152
132. Drummond	180	1,100	87	182	10,048	719	85
133. Drury		2,337	126	892	6,067		6,528
134. Dumfries N		900	8	261	10,736	69	1,538
135. Dumfries S	276	1,800	362	240	16,770	2,831	
136. Dummer	90	600	30	208	6,665	306	681
137. Dungannon	52		11	16	2,048	389	2,200
138. Dunn				82	3,373	628	11
139. Dunwich	3,320	6,000	771	1,090	29,400	5,145	4,942
140. Dymond	114	102	90	102	1,856	92	699
141. Dysart, Guilford, etc	122	1,600	35	47	7,416	831	1,536
142. Easthope N	2,253		350	92	14,839	6,181	100
143. Easthope S	1,095	1,313	125	227	11,482		603
144. Eastnor	1,738	6,659	1,060	107	20,827	80	5,391
145. Edwardsburg			100	256	14.315		5,968
146. Egremont				438	11,149	2,978	
147. Ekfrid	2,167	2,000	457	‖1,903	22.500	1,192	7,982
148. Elderslie		1,610	21	117	15.217	875	12
149. Eldon	219	1,700	635	356	12,556	2.148	280
150. Elizabethtown	5,000		600	790	32,440	333	4,421
151. Ellice	5,551	18,200	1,961	¶1,755	42.471	2,070	837
152. Elma	3,666		2,163	§2,322	36,427	11,571	275
153. Elmsley N			11	78	3.839	559	112
154. Elmsley S			1	81	4,874	59	
155. Elzevir & Grimesthorpe	299	225	117	31	4,519		1,951
156. Emily	271	1,500	125	260	12,184	215	

* Including $5.121 paid Roxboro' Tp. as share of drainage debt. † Including $1.469 Board of Health.
‡ Including $3.651 Board of Health. ‖ Including $1,129 Board of Health.
¶ Including $1.648 paid to other municipalities as share of debt.
§ Including $2.140 paid to other municipalities as share of debt.

TOWNSHIP MUNICIPALITIES. *Continued.*

ASSETS AND LIABILITIES.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
.....	125	1,544	.....	.....	.....	82	82	105
.....	1,400	2,977	1,480	.....	400	.....	1,880	106
.....	5,178	20,014	3,777	27,865	.....	3,040	34,682	107
.....	6,601	19,729	6,490	14,817	1,530	2,417	25,254	108
.....	3,049	4,880	.....	1,549	.....	130	1,679	109
.....	6,506	12,956	1,078	17,931	6,404	1,147	26,560	110
.....	4,715	7,541	.....	.....	538	75	613	111
9,123	5,298	16,992	1,297	15,818	3,832	538	21,485	112
7,658	1,243	10,578	.....	4,543	.....	.....	4,543	113
.....	725	2,722	1,560	.....	.....	.....	1,560	114
.....	1,141	2,722	.....	1,141	.....	265	1,406	115
.....	7,755	20,397	5,094	10,963	.....	1,178	17,235	116
.....	800	2,002	.....	.....	.....	.....	.....	117
.....	.....	884	125	.....	.....	141	266	118
200	60	1,316	382	.....	50	137	569	119
.....	2,116	4,813	.....	958	.....	140	1,098	120
.....	7,533	28,308	8,699	15,509	.....	1,268	25,476	121
.....	1,300	5,476	2,231	1,364	.....	.....	3,595	122
.....	.....	1,798	.....	.....	.....	189	189	123
.....	2,222	2,727	.....	120	.....	.....	120	124
5,000	6,829	11,864	.....	25,421	2,950	5,634	34,005	125
6,400	.....	13,934	4,686	.....	.....	1,150	5,836	126
.....	1,130	2,329	.....	.....	423	175	598	127
.....	658	1,336	.....	258	.....	639	897	128
.....	9,541	21,244	4,363	36,941	.....	2,722	44,026	129
.....	2,238	5,478	.....	7,549	.....	500	8,049	130
.....	445	2,885	1,154	270	.....	519	1,943	131
.....	180	984	.....	180	775	.....	955	132
307	705	7,540	825	500	1,836	313	3,474	133
.....	600	2,207	.....	.....	700	125	825	134
.....	7,060	9,891	.....	6,260	.....	.....	6,260	135
.....	1,180	2,167	27	180	.....	50	257	136
252	353	3,194	1,518	153	.....	.....	1,671	137
.....	1,025	1,664	.....	.....	.....	.....	.....	138
.....	2,945	13,032	5,026	9,220	4,081	1,435	19,762	139
.....	1,386	2,177	692	1,386	.....	425	2,503	140
.....	2,674	5,041	1,676	113	.....	.....	1,789	141
2,421	1,499	10,201	.....	8,843	.....	1,720	10,563	142
.....	693	1,296	.....	.....	639	716	1,355	143
4,945	3,281	13,697	500	15,825	2,336	1,368	20,029	144
17,877	.....	23,845	2,669	.....	3,214	145	5,968	145
.....	.....	2,978	.....	.....	.....	.....	.....	146
.....	4,413	13,587	4,610	7,114	.....	1,439	13,163	147
.....	3,800	4,687	.....	2,600	.....	.....	2,600	148
8,891	2,197	13,516	1,618	12,019	.....	200	13,837	149
5,765	2,365	12,884	2,957	7,000	.....	.....	9,957	150
.....	19,882	22,789	.....	18,356	9,000	776	28,132	151
.....	58,548	70,394	50	53,113	.....	7,373	60,536	152
.....	400	1,071	53	.....	200	.....	253	153
.....	402	461	.....	.....	.....	.....	.....	154
.....	3,201	5,152	629	2,251	307	.....	3,187	155
.....	431	646	.....	2,091	.....	.....	2,091	156

STATISTICS OF ONTARIO

RECEIPTS. DISBURSEMENTS.

Township Municipalities and County in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, fines, etc.	Refunds from Sinking Funds and Investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
157. Emo, Rainy River	717	1,481	146			250	1,650
158. Enniskillen, Lambton	7,830	29,993	67		379		
159. Ennismore, Peterborough	412	2,790	6				
160. Eramosa, Wellington	822	10,491	169		9		
161. Erin, Wellington	1,270	12,332	96				
162. Ernestown, Lennox & Addington		14,003	50	4,993	1,126		
163. Esquesing, Halton	3,395	14,321	113	557	1,918		
164. Essa, Simcoe	3,311	12,201	98			250	
165. Etobicoke, York	12,716	24,866	248	2,137	547	1,000	680
166. Euphemia, Lambton	542	9,134	104			2,000	
167. Euphrasia, Grey	731	12,528	26			987	
168. Faraday, Hastings	563	3,503	200				
169. Fenelon, Victoria	1,263	8,062	43			400	
170. Ferris, Nipissing	877	1,561	5		16		
171. Finch, Stormont	251	17,534	388			3,600	8,990
172. Fitzroy, Carleton	269	11,779	48				
173. Flamboro E., Wentworth	181	8,846	286		9		
174. Flamboro W., Wentworth	1,590	11,623	278	152	643	2,437	
175. Flos, Simcoe	7,171	16,134	64		35	2,500	1,200
176. Foley, Parry Sound	703	1,001	142				
177. Fredericksburg N., Lennox & Add.	573	6,278			117		
178. Fredericksburg S., Lennox & Add.	73	5,763			46		
179. Fullarton, Perth	1,214	13,768	35			3,900	
180. Gainsborough, Lincoln	21	8,415	9			450	
181. Galway and Cavendish, Peterboro		1,740					
182. Garafraxa E., Dufferin	884	9,740				1,500	
183. Garafraxa W., Wellington	381	10,398	35		4	1,967	
184. Georgina, York	56	6,040	53			250	
185. Glamorgan, Haliburton		1,301	28	54			
186. Glanford, Wentworth	1,323	5,801	35	300	358		
187. Glenelg, Grey	1,909	8,727	55		15	300	
188. Gloucester, Carleton	651	24,599	463		29	8,846	
189. Goderich, Huron	3,157	9,483	10			925	1,450
190. Gordon, Manitoulin	264	1,899					
191. Gosfield N., Essex	1,464	12,166	20		58	2,500	4,537
192. Gosfield S., Essex	45	13,612	137		38	3,000	1,347
193. Goulbourn, Carleton	2,556	11,745	61	12	300	942	
194. Gower N., Carleton	1,250	10,976	84				7,963
195. Gower S., Grenville	1,110	4,814	5				
196. Grantham, Lincoln	362	9,411	61		15		
197. Grattan, Renfrew	1,346	3,264	13				
198. Greenoch, Bruce	2,438	9,878	156	243	15	1,000	
199. Grey, Huron	1,000	13,936	79	5,024	101	2,185	504
200. Griffith and Matawatchan, Renfrew	67	1,027	5				
201. Grimsby N., Lincoln		5,015					1,819
202. Grimsby S., Lincoln	914	8,222	111			1,000	
203. Guelph, Wellington	937	9,000	69	2,256	521	2,602	
204. Gwillimbury E., York	1,700	13,057	122	627	541		
205. Gwillimbury N., York	524	5,833	71				
206. Gwillimbury W., Simcoe	561	10,096					
207. Hagarty, Jones, etc., Renfrew		5,599	287	100	12	340	
208. Hagerman, Parry Sound	594	864	20				

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

		Disbursements, 1902.									
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
53	4,297	266	225	345	.....	.....	.....	2,705	.....	.....	157
855	39,124	1,501	603	6,079	.....	598	3,241	9,448	2,144	.....	158
.....	3,208	225	96	98	.....	5	981	1,625	.....	.....	159
286	11,777	699	153	2,388	.....	70	3,163	4,520	.....	.....	160
13	13,711	675	184	1,694	28	18	2,700	7,123	.....	.....	161
62	20,234	618	306	2,018	.....	240	4,722	6,021	.....	4,850	162
14	20,318	866	553	4,126	.....	627	2,931	7,288	.....	487	163
170	16,030	866	210	2,939	.....	218	3,406	6,807	.....	.....	164
636	42,830	1,741	845	4,387	.....	122	7,196	7,618	618	1,900	165
96	11,876	670	411	2,536	.....	127	1,529	3,602	122	.....	166
303	14,575	724	1,091	1,560	.....	133	1,821	7,156	.....	.....	167
525	4,791	354	157	1,902	.....	.....	262	1,538	.....	.....	168
146	9,914	516	235	1,492	15	94	1,963	4,032	.....	.....	169
34	2,493	449	81	31	.....	.....	.....	1,003	.....	.....	170
*3,229	33,992	652	837	4,159	.....	56	1,149	6,985	7,528	.....	171
75	12,171	762	72	1,729	.....	38	2,236	5,474	.....	.....	172
.....	9,322	641	494	709	.....	157	2,511	4,209	.....	.....	173
45	16,768	822	534	2,088	.....	529	2,296	6,920	.....	198	174
987	28,091	1,059	451	2,635	81	84	2,841	7,463	106	128	175
22	1,868	219	87	142	.....	190	.....	538	.....	.....	176
.....	6,968	358	136	1,246	.....	222	2,031	2,699	.....	.....	177
.....	5,882	249	86	655	.....	20	2,364	2,288	.....	46	178
359	19,276	638	225	4,895	.....	28	3,393	4,022	57	.....	179
7	8,902	437	120	705	.....	.....	2,579	4,223	.....	.....	180
302	2,042	182	63	24	.....	17	436	1,157	.....	.....	181
.....	12,124	491	121	1,917	.....	5	1,379	4,687	21	.....	182
39	12,824	952	146	2,482	.....	.....	2,972	2,682	577	.....	183
219	6,618	377	133	630	.....	5	1,466	2,909	.....	.....	184
104	1,487	190	64	114	.....	54	148	634	.....	.....	185
28	7,845	431	146	273	.....	124	1,740	2,519	.....	300	186
133	11,139	781	310	2,079	.....	320	964	4,201	.....	.....	187
138	34,726	2,124	799	6,214	.....	112	4,121	11,128	654	79	188
111	15,136	576	305	2,288	225	5	2,205	5,230	.....	.....	189
.....	2,163	227	51	371	.....	.....	.....	250	.....	.....	190
942	21,687	746	3,212	2,825	.....	203	1,194	3,002	2,863	.....	191
289	18,468	842	689	2,983	.....	22	1,647	3,160	1,173	.....	192
194	15,810	950	312	3,890	.....	72	2,386	4,972	.....	.....	193
1,288	21,561	635	79	703	.....	72	1,712	4,127	2,159	8,445	194
2	5,931	385	139	455	.....	.....	747	1,413	1,630	.....	195
77	9,926	615	465	790	.....	.....	4,618	3,116	.....	.....	196
36	4,559	301	96	383	.....	22	506	1,847	.....	.....	197
313	14,043	738	173	3,533	.....	.....	2,454	4,735	.....	67	198
656	23,485	767	237	3,135	54	125	2,414	5,433	5,943	87	199
36	1,135	195	15	32	.....	.....	168	540	.....	.....	200
227	7,061	631	64	860	.....	3	.....	2,291	876	918	201
78	10,325	446	115	1,221	.....	1	1,293	3,384	.....	.....	202
201	15,586	744	244	2,032	.....	105	3,066	4,196	.....	2,206	203
63	16,110	653	375	2,335	.....	15	3,157	6,487	.....	627	204
5	6,433	413	135	521	.....	18	1,624	3,167	.....	.....	205
276	10,933	654	138	1,304	.....	229	2,517	5,047	.....	.....	206
303	6,641	488	315	874	.....	36	444	3,488	.....	.....	207
214	1,692	203	79	62	.....	21	.....	976	.....	.....	208

* Including $3,116 as share of debt from other municipalities

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
157. Emo	73	550	33	49	4,246	51	1,435
158. Enniskillen	6,711	.....	1,400	758	32,483	6,641	29,741
159. Ennismore	.....	.....	.....	22	3,052	156	1,268
160. Eramosa	.....	.....	12	193	11,198	579	8,380
161. Erin	270	.....	49	214	12,955	756	3,400
162. Ernestown	63	1,144	99	157	20,233	1	5,171
163. Esquesing	.....	.....	.....	1,086	17,964	2,354	697
164. Essa	135	250	76	230	15,137	893	968
165. Etobicoke	5,858	1,351	1,406	†1,206	34,248	8,582	5,332
166. Euphemia	1,102	500	82	1,069	11,750	126	4,080
167. Euphrasia	112	987	46	307	13,937	638	1,265
168. Faraday	288	.....	210	5	4,716	75	4,235
169. Fenelon	211	400	38	124	9,120	794	3,846
170. Ferris	51	.....	103	168	1,886	607	1,615
171. Finch	3,082	4,250	1,644	*3,620	33,962	30	2,477
172. Fitzroy	.....	.....	3	195	10,509	1,662	5,683
173. Flamboro E	.....	.....	.....	429	9,150	172	4,930
174. Flamboro W	.....	2,537	134	210	16,268	500	1,418
175. Flos	1,684	2,500	1,432	441	20,905	7,186	1,874
176. Foley	.....	.....	.....	148	1,324	544	440
177. Fredericksburg N	.....	.....	6	100	6,798	170	2,550
178. Fredericksburg S	.....	.....	.....	19	5,727	155	418
179. Fullarton	.....	4,300	145	132	17,835	1,441	.....
180. Gainsborough	.....	450	10	153	8,677	225	1,222
181. Galway and Cavendish	.....	.....	.....	37	1,916	126	1,855
182. Garafraxa, E	666	1,500	205	216	11,208	916	.....
183. Garafraxa, W	.....	1,967	33	228	12,039	785	5,297
184. Georgina	211	250	21	78	6,080	538	5
185. Glamorgan	135	1	28	47	1,415	72	2,082
186. Glanford	.....	.....	.....	150	5,683	2,162	10
187. Glenelg	.....	300	3	223	9,181	1,958	.....
188. Gloucester	1,485	5,251	871	†1,645	34,483	243	25,097
189. Goderich	.....	925	16	54	11,829	3,307	7
190. Gordon	.....	.....	69	54	1,022	1,141	977
191. Gosfield, N	2,726	2,500	951	826	21,048	639	7,928
192. Gosfield, S	3,386	3,000	1,084	388	18,374	94	9,259
193. Goulbourn	.....	800	20	417	13,819	1,991	1,435
194. Gower, N	958	.....	811	415	20,116	1,445	2,510
195. Gower, S	.....	.....	.....	165	4,934	997	324
196. Grantham	.....	.....	.....	322	9,926	.....	2,225
197. Grattan	100	.....	31	115	3,401	1,258	38
198. Greenoch	242	1,000	64	559	13,565	478	950
199. Grey	1,196	2,185	1,201	527	23,304	181	1,746
200. Griffith & Matawatchan	.....	.....	.....	166	1,116	19	610
201. Grimsby, N	92	708	121	294	6,858	203	2,780
202. Grimsby, S	570	2,000	332	70	9,432	893	101
203. Guelph	.....	2,800	24	169	15,586	.....	7,671
204. Gwillimbury, E	.....	.....	76	203	13,928	2,182	214
205. Gwillimbury, N	.....	.....	.....	20	5,898	535	57
206. Gwillimbury, W	.....	.....	.....	125	10,014	919	857
207. Hagarty, Jones, etc	70	316	301	309	6,641	.....	1,198
208. Hagerman	.....	.....	.....	79	1,420	272	969

* Including $1,648 Board of Health expenses and $1,350 from other municipalities as share of debt.
† Including $1,518 Board of Health expenses.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	2,177	3,663	456	2,177	.....	.....	2,633	157
.....	19,403	55,785	3,065	24,899	.....	712	28,676	158
.....	.....	1,424	2,043	.....	.....	.....	2,043	159
.....	33	8,992	6,873	.....	.....	100	6,973	160
.....	811	4,967	1,232	810	.....	26	2,068	161
23,100	821	29,093	2,828	66	1,000	5	3,899	162
39,475	.....	42,526	.....	.....	.....	467	467	163
.....	1,515	3,376	.....	1,515	.....	105	1,620	164
13,204	15,646	42,764	4,167	23,153	.....	327	27,647	165
.....	798	5,004	2,228	110	1,538	953	4,839	166
.....	505	2,408	.....	505	.....	90	595	167
.....	915	5,225	2,622	3,215	.....	.....	5,837	168
.....	925	5,565	2,942	800	.....	263	4,005	169
.....	731	2,953	1,006	731	426	147	2,310	170
.....	5,647	8,154	1,208	29,896	5,253	1,900	38,257	171
.....	800	8,145	3,451	.....	.....	.....	3,451	172
.....	2,000	7,102	3,180	.....	.....	.....	3,180	173
15,454	6,133	23,505	.....	.....	3,638	331	3,969	174
1,305	4,661	15,026	5,842	27,593	.....	550	33,985	175
.....	160	1,144	449	.....	.....	.....	449	176
3,500	481	6,701	1,035	.....	.....	.....	1,035	177
1,237	800	2,610	2,663	.....	.....	.....	2,663	178
.....	800	2,241	.....	.....	600	.....	600	179
.....	12	1,459	.....	.....	.....	53	53	180
.....	.....	1,981	1,228	.....	.....	62	1,290	181
.....	73	989	.....	3,714	.....	.....	3,714	182
.....	750	6,832	5,244	.....	.....	445	5,689	183
.....	300	843	.....	219	.....	.....	219	184
.....	397	2,551	819	351	.....	121	1,291	185
7,300	864	10,336	.....	.....	.....	219	219	186
.....	1,260	3,218	.....	.....	.....	.....	.....	187
1,343	8,978	35,661	14,077	13,357	5,500	200	33,134	188
.....	1,450	4,764	2,220	1,450	.....	.....	3,670	189
.....	40	2,158	900	.....	.....	6	906	190
.....	3,834	12,401	1,194	20,930	.....	3,598	25,722	191
.....	.....	9,353	2,648	20,762	1,000	2,437	26,847	192
7,691	649	11,766	2,440	.....	1,104	937	4,481	193
8,676	2,500	15,131	1,712	7,843	.....	.....	9,555	194
.....	.....	1,321	747	.....	.....	194	941	195
.....	.....	2,225	742	.....	.....	100	842	196
.....	960	2,256	543	500	.....	25	1,068	197
67	651	2,146	.....	651	.....	75	726	198
7,607	2,774	12,308	214	28,635	.....	80	28,929	199
.....	.....	629	415	.....	.....	203	618	200
918	2,047	5,948	2,281	2,476	.....	20	4,777	201
.....	1,976	2,970	280	4,267	.....	30	4,577	202
14,506	19	22,196	2,907	.....	2,602	200	5,709	203
12,974	300	15,670	.....	.....	1,851	.....	1,851	204
.....	.....	592	.....	.....	.....	7	7	205
.....	.....	1,776	.....	.....	.....	85	85	206
1,836	166	3,200	.....	3,340	370	.....	3,710	207
.....	435	1,676	630	.....	.....	73	703	208

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
209. Haldimand, Northumberland	2,658	15,110	119	.....	103	1,500	.....
210. Hallam, Algoma	1,054	2,381	139	.....	.....	.....	.....
211. Hallowell, Prince Edward	308	9,919	19	.....	1	500	.....
212. Hamilton, Northumberland	506	14,609	136	111	78	600	.....
213. Harvey, Peterborough	79	3,295	.....	.....	.....	64	3,000
214. Harwich, Kent	8,916	26,296	236	.....	146	.....	296
215. Hawkesbury E., Prescott	2,314	12,374	180	.....	.....	1,600	.....
216. Hawkesbury W., Prescott	1,883	8,388	.....	.....	.....	2,000	.....
217. Hay, Huron	118	14,757	150	2,445	51	50	.....
218. Head, Clara and Maria, Renfrew	126	916	91	.....	.....	.....	.....
219. Hibbert, Perth	934	13,593	96	.....	.....	49	4,201
220. Hillier, Prince Edward	340	7,125	27	.....	9	550	.....
221. Hilton, Algoma	546	1,201	56	.....	5	.....	.....
222. Himsworth N., Parry Sound	1,245	1,701	130	.....	.....	.....	.....
223. Himsworth S., Parry Sound	639	5,022	230	.....	.....	200	.....
224. Hinchinbrooke, Frontenac	515	4,967	32	.....	.....	.....	.....
225. Holland, Grey	669	8,824	109	.....	.....	.....	.....
226. Hope, Durham	746	10,957	55	.....	1,564	.....	6,901
227. Horton, Renfrew	1,188	3,195	6	50	48	.....	.....
228. Houghton, Norfolk	.....	6,851	51	.....	.....	1,186	.....
229. Howard, Kent	4,377	17,957	42	.....	70	.....	.....
230. Howe Island, Frontenac	443	1,339	.....	.....	.....	.....	.....
231. Howick, Huron	1,911	15,699	91	1,140	322	3,000	.....
232. Howland, Bidwell, Sheg., Manitoulin	426	2,971	38	.....	.....	50	500
233. Hullett, Huron	132	12,571	64	2,123	51	.....	.....
234. Humberstone, Welland	454	8,951	275	.....	.....	500	1,486
235. Humphrey, Parry Sound	794	1,962	66	.....	.....	180	.....
236. Hungerford, Hastings	.....	11,127	254	.....	.....	21	.....
237. Huntingdon, Hastings	68	8,133	20	.....	.....	.....	310
238. Huntley, Carleton	2,514	9,061	87	.....	.....	.....	.....
239. Huron, Bruce	2,620	16,077	273	.....	32	.....	.....
240. Innisfil, Simcoe	1,878	16,153	85	.....	43	.....	4,095
241. Jocelyn, Algoma	179	1,029	12	.....	10	15	.....
242. Johnston, Tarbutt, etc., Algoma	235	3,533	33	50	.....	335	1,200
243. Joly, Parry Sound	86	703	.....	.....	.....	100	.....
244. Kaladar and Ang., Lennox and Add	208	2,504	20	.....	.....	.....	.....
245. Keewatin, Rainy River	.....	4,799	223	.....	.....	2,155	.....
246. Kennebec, Frontenac	318	2,796	20	.....	.....	.....	.....
247. Kenyon, Glengarry	.....	12,489	288	.....	.....	6,228	.....
248. Keppel, Grey	1,650	8,144	69	.....	45	.....	.....
249. Kincardine, Bruce	144	11,853	24	.....	.....	1,827	.....
250. King, York	.....	21,010	472	2,183	1,883	967	.....
251. Kingston, Frontenac	7,635	13,876	76	.....	45	.....	.....
252. Kinloss, Bruce	2,319	8,520	64	19	31	.....	.....
253. Kitley, Leeds	1,556	8,005	80	.....	24	.....	.....
254. Laird, Algoma	341	1,623	.....	.....	.....	.....	600
255. Lanark, Lanark	481	6,102	28	.....	11	.....	.....
256. Lancaster, Glengarry	1,603	11,014	174	.....	.....	.....	.....
257. Lavant, Lanark	219	1,610	67	.....	.....	.....	.....
258. Laxton, Digby, Longford, Victoria	555	2,376	25	2,122	.....	.....	.....
259. Leeds and Lansdowne Front, Leeds	211	15,118	101	.....	9	3,725	.....
260. Leeds and Lansdowne Rear, Leeds	1,474	9,703	80	.....	100	1,265	.....

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
125	19,615	1,050	631	3,402	56	366	4,403	7,114	.....	.....	209
.....	3,574	287	92	693	.....	16	.....	663	.....	.....	210
.....	10,747	310	339	386	400	463	2,439	5,143	.....	.....	211
53	16,093	897	369	3,034	.....	228	2,822	7,070	.....	.....	212
72	6,510	379	64	172	.....	.....	497	2,084	.....	.....	213
234	36,124	1,701	768	5,546	.....	747	6,151	9,915	329	.....	214
7	16,475	418	644	1,511	2,500	10	1,904	7,658	.....	.....	215
975	13,246	330	92	1,352	.....	.....	903	2,978	.....	.....	216
63	17,634	604	517	1,716	516	50	2,606	5,943	955	1,260	217
.....	1,133	233	27	8	.....	.....	93	536	.....	.....	218
685	19,558	677	175	3,101	.....	68	3,291	3,836	396	3,935	219
8	8,059	372	167	371	264	406	1,452	4,011	.....	.....	220
.....	1,808	222	49	334	.....	.....	.....	565	.....	33	221
34	3,110	222	99	165	.....	39	.....	1,564	.....	.....	222
3	6,094	471	78	400	.....	17	.....	2,367	.....	.....	223
.....	5,514	361	106	1,139	.....	58	28	2,627	.....	.....	224
77	9,679	690	171	879	.....	185	1,427	5,620	.....	.....	225
607	20,830	928	406	8,682	128	631	3,193	6,176	.....	.....	226
10	4,497	302	117	300	.....	63	663	2,102	.....	.....	227
36	8,124	491	221	1,834	.....	12	1,095	3,088	.....	.....	228
126	22,572	1,159	377	2,737	.....	287	3,993	5,302	1,387	.....	229
.....	1,782	99	22	26	.....	.....	505	775	.....	.....	230
76	22,239	887	289	1,887	.....	13	2,547	6,675	301	2,122	231
.....	3,985	205	109	222	58	20	.....	1,816	.....	.....	232
210	15,151	741	156	2,500	.....	10	2,361	6,104	145	2,000	233
13	11,679	685	289	989	66	50	2,522	3,381	338	.....	234
43	3,045	339	63	418	.....	5	.....	1,114	.....	.....	235
.....	11,402	715	187	808	.....	255	3,306	5,703	.....	.....	236
273	8,804	508	109	201	17	202	3,364	4,105	.....	.....	237
.....	11,662	810	190	1,726	.....	.....	1,756	3,575	.....	.....	238
609	19,611	819	332	4,476	863	50	3,189	6,513	.....	.....	239
553	22,807	1,056	325	2,913	.....	482	3,601	8,368	1,110	1,761	240
34	1,279	166	51	138	.....	.....	.....	704	.....	36	241
12	5,398	299	102	558	263	.....	.....	2,899	.....	.....	242
25	914	179	36	70	.....	.....	.....	538	.....	.....	243
190	2,922	216	94	304	.....	6	.....	1,792	.....	.....	244
226	7,403	459	135	1,550	.....	.....	.....	3,160	.....	.....	245
4	3,138	282	44	178	.....	80	302	1,865	.....	.....	246
539	19,544	627	589	1,326	.....	94	1,408	7,226	3,629	.....	247
220	10,128	993	189	2,871	.....	95	1,500	1,660	2	189	248
125	13,973	722	217	2,494	.....	17	2,811	5,177	.....	67	249
60	26,575	1,111	1,453	4,388	.....	71	6,073	10,179	.....	180	250
3	21,635	597	409	1,677	.....	227	7,046	4,858	5	.....	251
239	11,192	578	104	1,513	.....	35	2,114	3,816	.....	.....	252
.....	9,665	476	329	2,704	.....	15	1,695	4,148	.....	.....	253
21	2,585	171	90	310	.....	.....	.....	1,134	.....	.....	254
29	6,651	404	109	664	9	10	1,141	3,034	.....	.....	255
133	12,924	753	320	1,761	.....	63	1,776	5,390	210	.....	256
28	1,924	276	53	65	8	.....	163	1,073	.....	.....	257
133	5,211	292	54	775	.....	7	249	1,349	.....	1,376	258
110	19,274	816	226	7,213	.....	30	2,019	6,037	.....	.....	259
.....	12,622	502	261	2,574	.....	5	1,268	4,568	.....	251	260

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
209. Haldimand	56	500	13	432	18,023	1,592	1,401
210. Hallam	150	.....	162	106	2,169	1,405	1,514
211. Hallowell	.....	500	6	196	10,182	565	.....
212. Hamilton	.....	600	10	387	15,417	676	1,958
213. Harvey	148	.....	37	*3,129	6,510	.....	2,688
214. Harwich	4,300	.....	654	1,409	31,520	4,604	4,064
215. Hawkesbury East	190	.....	75	319	15,229	1,246	115
216. Hawkesbury West	1,309	2,442	725	211	10,342	2,904	.....
217. Hay	2,308	50	418	545	17,488	146	1,148
218. Head, Clara and Maria	.....	.....	.....	20	917	216	999
219. Hibbert	804	49	182	226	16,740	2,818	.....
220. Hillier	.....	550	12	179	7,784	275	100
221. Hilton	.....	.....	50	83	1,336	472	2,333
222. Himsworth N	89	.....	70	147	2,395	715	760
223. Himsworth S	474	200	185	484	4,676	1,418	1,216
224. Hinchinbrooke	.....	387	.....	128	4,834	680	364
225. Holland	.....	.....	.....	302	9,274	405	1,282
226. Hope	.....	.....	.....	334	20,478	352	3,753
227. Horton	.....	.....	.....	31	3,578	919	1,477
228. Houghton	342	795	155	91	8,124	.....	1,303
229. Howard	1,919	.....	385	669	18,215	4,357	2,191
230. Howe Island	.....	.....	.....	.....	1,427	355	359
231. Howick	338	3,000	1,147	202	19,408	2,831	1,571
232. Howland, Bidwell and Sheg.	100	175	21	643	3,369	616	362
233. Hullett	686	.....	280	99	15,082	69	.....
234. Humberstone	592	500	70	906	10,388	1,291	1,488
235. Humphrey	304	.....	48	101	2,392	653	1,083
236. Hungerford	.....	261	.....	167	11,402	.....	5,872
237. Huntingdon	165	.....	32	22	8,725	79	3,668
238. Huntley	596	.....	170	326	9,149	2,513	947
239. Huron	620	.....	132	526	17,520	2,091	147
240. Innisfil	302	.....	183	240	20,341	2,466	307
241. Jocelyn	.....	140	42	2	1,279	.....	448
242. Johnston, Tarbutt, etc	100	.....	52	215	4,488	910	748
243. Joly	.....	.....	.....	21	844	70	799
244. Kaladar and Anglesea	.....	.....	.....	36	2,448	474	1,410
245. Keewatin	514	585	300	700	7,403	.....	1,906
246. Kennebec	.....	.....	.....	112	2,863	275	2,598
247. Kenyon	174	3,624	197	650	19,544	.....	2,845
248. Keppel	372	.....	330	212	8,413	1,715	9,417
249. Kincardine	54	1,867	63	484	13,973	.....	1,401
250. King	399	.....	100	†2,621	26,575	.....	2,125
251. Kingston	.....	.....	.....	385	15,204	6,431	2,908
252. Kinloss	130	.....	42	307	8,639	2,553	4
253. Kitley	.....	.....	.....	3	9,370	295	61
254. Laird	80	.....	33	104	1,922	663	347
255. Lanark	239	.....	38	107	5,755	896	729
256. Lancaster	.....	.....	.....	557	10,830	2,094	3,254
257. Lavant	.....	.....	.....	69	1,707	217	6
258. Laxton, Digby and Longford	.....	.....	250	364	4,716	495	.....
259. Leeds and Lansdowne Front	.....	2,525	56	232	19,154	120	168
260. Leeds and Lansdowne Rear	.....	1,265	274	43	11,011	1,611	177

* Including $3,000 paid to Lindsay, Bobcaygeon and Pontypool Railway.
† Including $2,068 *re* S. & A. Railway bonus.

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES, 1902—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	3,003	5,996	.....	124	1,025	99	1,248	209
.....	3,463	6,382	900	3,088	.....	11	3,999	210
.....	2,016	2,581	.....	.....	.....	.....	.....	211
163	2,127	4,924	.....	.....	.....	100	100	212
.....	633	3.321	1,374	3,530	64	500	5,468	213
.....	11,624	20,292	118	9,584	.....	1,371	11,073	214
.....	2,629	3,990	.....	629	2,319	833	3,781	215
.....	10,746	13,650	.....	11,756	1,238	.....	12,994	216
1,260	1,944	4,498	.....	8,226	.....	28	8,254	217
.....	.....	1,215	415	.....	.....	.....	415	218
3,935	800	7,553	.....	6,159	.....	.....	6,159	219
.....	2,000	2,375	.....	.....	.....	242	242	220
185	1,490	4,480	444	1,000	.....	.....	1,444	221
.....	1,322	2,797	701	1,077	.....	53	1,831	222
.....	2,614	5,248	1,510	2,614	.....	.....	4,124	223
.....	1,000	2,044	1,141	.....	207	172	1,520	224
.....	360	2,047	.....	.....	.....	95	95	225
30,840	600	35,545	.....	6,901	836	118	7,855	226
410	1,350	4,156	340	.....	.....	75	415	227
.....	5,810	7,113	768	2,261	486	.....	3 515	228
.....	7,882	14,430	262	6,382	.....	370	7,014	229
.....	.....	714	505	.....	.....	75	580	230
8,632	2,100	15,134	2,617	20,536	660	90	23,903	231
.....	307	1,285	382	400	.....	207	989	232
2,597	.....	2,666	.....	5,479	.....	.....	5,479	233
.....	4,373	7,152	1,100	1,866	.....	768	3,734	234
.....	1,117	2,853	530	168	180	.....	878	235
.....	3,000	8,872	3,700	.....	21	450	4,171	236
.....	1,170	4,917	2,830	670	.....	.....	3,500	337
.....	1,605	5,065	1,756	2,753	.....	255	4,764	238
.....	4,018	6,256	.....	2,018	.....	.....	2,018	239
1,761	1,950	6,484	.....	4,769	.....	.....	4,769	240
328	1,172	1,948	.....	600	15	.....	615	241
.....	500	2,158	715	1,500	549	130	2,894	242
.....	.....	869	245	.....	100	70	415	243
.....	353	2,237	1,307	.....	.....	127	1,434	244
.....	6,036	7,942	.....	5,235	2,155	113	7,503	245
.....	600	3.473	2,708	.....	.....	198	2,906	246
.....	5,705	8,550	.....	577	6,228	.....	6,805	247
1,413	1,262	13,807	6,033	7,845	.....	168	14.046	248
134	696	2,231	.....	581	27	.....	608	249
39,264	2,149	43,538	.....	174	3,281	109	3,564	250
1,650	1,839	12,828	7,487	.....	.....	16	7,503	251
.....	1,512	4,069	.....	910	.....	.....	910	252
.....	2,000	2,356	.....	.....	.....	.....	.....	253
.....	1,470	2,480	214	1,070	.....	.....	1,284	254
.....	1,800	3,425	21	516	.....	345	882	255
.....	.....	5,348	3,295	.....	.....	1,525	4,820	256
.....	.....	223	100	.....	.....	.....	100	257
6,501	.....	6,996	.....	5,000	.....	.....	5,000	258
.....	5,000	5,288	.....	.....	1,200	80	1,280	259
3,482	.....	5,270	11	5,000	.....	60	5,071	260

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
261. Limerick, Hastings	45	1,456	20			57	
262. Lindsay and St. Edmunds, Bruce	268	4,549			21	1,100	
263. Lobo, Middlesex	13,210	15,798	100		144		
264. Lochiel, Glengarry	1	12,475	499	284	13	2,000	280
265. Logan, Perth	1,523	18,050	86			2,996	5,945
266. London, Middlesex	14,726	34,542	428		96	3,000	
267. Longueuil, Prescott	37	2,275	30			77	
268. Loughborough, Frontenac	46	6,675	66			376	
269. Louth, Lincoln	10	10,074	64		21	567	
270. Luther E., Dufferin	1,880	8,181		200	7	2,000	
271. Luther W., Wellington	2,549	9,022	37		20	400	
272. Lutterworth, Haliburton	467	1,346					
273. McDougall, Parry Sound	322	1,674				71	
274. McGillivrary, Middlesex	1,357	15,514	31		20	1,650	1,475
275. McIrvine (Fort Francis) Rainy River	446	5,426	666			1,200	1,000
276. McKellar, Parry Sound	151	1,397	70				
277. McKillop, Huron	2,212	14,054	19		739	2,595	3,476
278. McKim, Nipissing	1,355	6,174	95			2,263	
279. McLean and Ridout, Muskoka	38	2,462	59			100	
280. McMurrich, Parry Sound	859	1,768	43				
281. McNab, Renfrew	1,969	9,280	125		55		
282. Macaulay, Muskoka	238	3,307	12			820	
283. Macdonald and Meredith, Algoma	472	1,701					
284. Machar, Parry Sound	718	2,469	34				1,800
285. Madoc, Hastings		11,893				1,529	1,971
286. Maidstone, Essex	676	15,979	213		42	2,000	4,878
287. Malahide, Elgin	3,449	23,248	36		59	4,300	863
288. Malden, Essex	307	7,237	65			1,080	
289. Manvers, Durham	468	12,914	215			2,160	700
290. Mara, Ontario	331	10,411	130			3,000	
291. March, Carleton	859	3,930	51		32		
292. Mariposa, Victoria	9,766	19,772			86	700	
293. Markham, York	5,680	27,982	233		48		
294. Marlborough, Carleton	929	5,331	24				1,256
295. Marmora and Lake, Hastings	597	4,226	91			2,538	
296. Maryborough, Wellington	2,537	17,656	50		16	4,000	1,800
297. Marysburg N., Prince Edward		3,776		65	217	611	
298. Marysburg S., Prince Edward	67	3,945	3	169	417	1,174	
299. Matchedash, Simcoe	525	1,346	3	148	6		500
300. Matilda, Dundas		20,428	2			19,185	
301. Mattawan, Nipissing		693					
302. Mayo, Hastings	67	1,343				12	
303. Medonte, Simcoe	1,823	12,248	207		18		570
304. Medora and Wood, Muskoka	475	7,450	120				
305. Melancthon, Dufferin	107	14,065	1	2,705	295	5,407	
306. Mersea, Essex	1,226	28,970	62			2,000	6,604
307. Metcalfe, Middlesex	1,017	12,999	16		7	300	
308. Middleton, Norfolk	50	10,543	97		16		
309. Minden, Haliburton	5	3,046	13				
310. Minto, Wellington	212	10,069	23	3,278	12	950	4,549
311. Monaghan N., Peterborough	1,847	4,388	60			800	
312. Monaghan, S., Northumberland	82	4,236	37				

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
310	1,888	370	73	406	.....	.....	112	763	.....	.....	261
169	6,107	641	143	436	.....	.....	291	2,132	.....	.....	262
277	29,529	843	383	3,545	.....	16	5,243	4,537	1,117	.....	263
16	15,568	782	725	1,320	.....	67	1,487	7,191	.....	.....	264
662	29,262	1,001	282	3,801	.....	348	3,662	5,759	1,940	.....	265
409	53,201	1,753	1,540	5,508	.....	531	11,300	10,922	215	.....	266
.....	2,419	213	48	91	.....	2	520	1,427	73	.....	267
.....	7,163	433	176	667	.....	13	721	4,171	.....	.....	268
.....	10,736	454	136	1,515	.....	.....	2,966	3,762	.....	.....	269
437	12,705	412	719	1,997	235	5	1,158	3,405	42	.....	270
391	12,419	627	295	1,321	234	5	2,359	4,207	554	31	271
215	2,028	199	53	98	.....	5	184	877	.....	.....	272
110	2,177	230	114	587	.....	15	.....	896	.....	.....	273
126	20,173	818	221	3,257	.....	5	3,554	7,219	.....	.....	274
29	8,767	600	614	2,474	500	86	.....	1,600	.....	.....	275
92	1,710	245	78	289	.....	5	.....	621	.....	.....	276
140	23,235	692	236	5,199	.....	33	2,297	6,006	1,433	.....	277
289	10,176	567	180	1,351	.....	.....	.....	2,969	.....	.....	278
95	2,754	239	119	485	120	7	.....	1,035	.....	.....	279
93	2,733	288	154	257	.....	12	.....	1,138	.....	.....	280
7	11,436	637	171	543	.....	94	1,324	5,523	.....	.....	281
78	4,455	272	120	1,278	.....	56	.....	1,394	.....	.....	282
.....	2,173	173	58	440	125	.....	.....	1,025	50	.....	283
27	5,048	184	101	176	150	5	.....	3,387	.....	.....	284
286	15,679	599	296	350	.....	205	3,238	7,460	.....	.....	285
675	24,463	1,206	203	2,958	.....	524	3,425	4,931	1,187	.....	286
143	32,098	1,109	398	5,300	.....	25	4,926	7,196	651	.....	287
.....	8,689	557	147	1,398	.....	83	1,150	2,660	.....	.....	288
83	16,540	850	262	3,172	.....	297	1,734	6,661	.....	.....	289
74	13,946	761	246	2,511	.....	130	1,352	4,116	17	.....	290
.....	4,872	350	210	492	.....	.....	760	1,756	183	.....	291
80	30,404	1,079	443	2,956	.....	631	5,567	8,454	1,468	.....	292
159	34,102	1,278	420	3,991	122	233	7,013	11,901	.....	.....	293
27	7,567	602	136	660	.....	5	1,138	2,980	639	.....	294
304	7,756	495	258	957	.....	256	1,599	3,148	.....	.....	295
454	26,513	875	255	6,667	117	68	3,633	9,220	5	.....	296
9	4,678	244	75	245	.....	14	884	2,585	.....	.....	297
.....	5,775	259	148	533	.....	27	842	3,074	.....	185	298
120	2,648	200	70	349	.....	.....	234	883	.....	50	299
60	39,675	470	1,292	2,487	.....	379	4,456	7,288	4,390	.....	300
.....	693	166	66	15	.....	.....	.....	433	.....	.....	301
220	1,642	262	92	248	.....	.....	113	826	.....	.....	302
222	15,088	785	263	2,973	50	348	2,331	5,684	587	.....	303
322	8,367	446	267	1,948	.....	18	.....	3,958	.....	.....	304
67	22,647	654	309	2,637	.....	60	4,104	7,518	135	561	305
315	39,177	1,417	845	4,927	.....	246	2,703	10,202	2,662	.....	306
761	15,100	636	252	2,492	.....	8	2,948	3,685	847	.....	307
270	10,976	914	158	4,679	.....	5	1,100	3,036	37	.....	308
182	3,246	242	67	382	.....	5	325	1,974	.....	.....	309
241	19,334	989	265	2,618	16	18	.....	5,939	2,787	4,932	310
4	7,099	362	104	1,096	.....	10	1,447	1,366	.....	.....	311
64	4,419	296	273	589	.....	8	983	1,580	.....	.....	312

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$,	$	$
261. Limerick	.....	.....	.....	100	1,824	64	1,365
262. Lindsay and St. Edmunds	.....	1,141	52	491	5,327	780	5,847
263. Lobo	306	.....	127	240	16,357	13,172	146
264. Lochiel	760	1,000	156	*2,059	15,547	21	15,049
265. Logan	2,234	1,996	812	1,219	23,054	6,208	208
266. London	120	3,000	60	657	35,606	17,595	7,167
267. Longueuil	.....	.....	7	38	2,419	.....	1,739
268. Loughborough	308	376	22	27	6,914	249	3,501
269. Louth	.....	567	10	685	10,095	641	1,001
270. Luther E	1,193	2,000	440	91	11,697	1,008	436
271. Luther W	1,016	400	298	161	11,508	911	536
272. Lutterworth	.....	.....	.....	28	1,444	584	560
273. McDougall	.....	300	2	39	2,177	.....	1,656
274. McGillivray	447	1,650	168	329	17,668	2,505	5
275. McIrvine (Fort Francis)	94	673	203	416	7,260	1,507	2,096
276. McKellar	.....	.....	24	67	1,329	381	1,639
277. McKillop	288	2,576	258	165	19,183	4,052	116
278. McKim	248	4,100	226	335	9,976	200	2,228
279. McLean and Ridout	175	100	42	193	2,515	239	1,604
280. McMurrich	77	.....	32	184	2,142	621	2,090
281. McNab	212	.....	11	1,097	9,612	1,824	2,268
282. Macaulay	.....	997	42	77	4,236	219	890
283. Macdonald and Meredith	.....	.....	.....	239	2,110	63	635
284. Machar	74	.....	75	149	4,301	747	1,075
285. Madoc	1,431	285	1,224	591	15,679	.....	7,385
286. Maidstone	4,219	3,500	774	1,041	23,968	495	15,011
287. Malahide	2,135	4,300	637	134	26,811	5,287	958
288. Malden	18	1,700	81	271	8,065	624	5,033
289. Manvers	89	2,160	155	150	15,530	1,010	210
290. Mara	389	3,000	271	332	13,125	821	.....
291. March	430	.....	90	22	4,293	579	2,080
292. Mariposa	628	450	329	122	22,127	8,277	.....
293. Markham	242	.....	192	838	26,230	7,872	1,109
294. Marlborough	41	200	75	139	6,615	952	2,933
295. Marmora and Lake	242	.....	102	524	7,581	175	4,892
296. Maryborough	525	4,000	201	83	25,649	864	1,048
297. Marysburg N	.....	593	11	27	4,678	.....	380
298. Marysburg S	.....	490	74	122	5,754	21	.....
299. Matchedash	148	.....	6	2	1,942	706	508
300. Matilda	3,034	15,026	770	83	39,675	.....	2,148
301. Mattawan	.....	4	.....	.....	684	9	485
302. Mayo	60	.....	4	37	1,642	.....	1,485
303. Medonte	290	.....	99	168	13,578	1,510	2,561
304. Medora and Wood	200	.....	36	138	7,011	1,356	4,834
305. Melancthon	3,378	2,800	388	103	22,647	.....	2,376
306. Mersea	7,892	4,500	2,073	373	37,840	1,337	16,905
307. Metcalfe	853	300	66	717	12,204	2,896	3,005
308. Middleton	420	.....	180	300	10,829	147	3,857
309. Minden	94	36	83	28	3,236	10	2,290
310. Minto	143	950	185	166	19,008	326	6,391
311. Monaghan N	.....	800	25	23	5,233	1,866	.....
312. Monaghan S	.....	.....	.....	14	3,743	676	.....

* Including $1,956 Board of Health expenses.

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					No.
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
$	$	$	$	$	$	$	$	
.....	285	1,714	682	.....	57	134	873	261
.....	.....	6,627	.....	.....	2,391	.....	2,391	262
.....	4,945	18,263	5,261	2,549	.....	.....	7,810	263
.....	2,370	17,440	8,489	2,300	3,094	827	14,710	264
.....	2,680	9,096	.....	16,527	3,500	2,112	22,139	265
.....	2,888	27,650	12,092	753	.....	28	12,873	266
.....	.....	1,739	1,332	.....	77	.....	1,409	267
.....	50	3,800	2,874	.....	.....	527	3,401	268
.....	305	1,947	.....	.....	.....	75	75	269
.....	4,165	5,609	.....	7,700	.....	102	7,802	270
247	1,185	2,879	.....	5,639	.....	46	5,685	271
.....	229	1,373	452	.....	.....	15	467	272
.....	50	1,706	.....	.....	71	.....	71	273
.....	3,178	5,688	.....	1,928	.....	.....	1,928	274
.....	4,845	8,448	1,650	3,286	700	991	6,627	275
.....	646	2,666	860	400	.....	14	1,274	276
14,582	9,300	28,050	.....	9,172	.....	80	9,252	277
.....	4,091	6,519	772	3,582	163	627	5,144	278
.....	1,487	3,330	1,088	487	.....	.....	1,575	279
.....	853	3,564	1,176	458	.....	.....	1,634	280
.....	750	4,842	868	.....	.....	224	1,092	281
.....	675	1,784	582	.....	344	.....	926	282
.....	125	823	.....	.....	.....	.....	.....	283
.....	3,330	5,152	703	2,969	.....	129	3,801	284
.....	2,405	9,790	.....	30,240	1,529	.....	31,769	285
.....	906	16,412	3,929	10,945	2,000	2,314	19,188	286
.....	366	6,611	.....	10,618	.....	390	11,008	287
.....	834	6,491	2,963	451	1,114	118	4,646	288
.....	2,971	4,191	.....	2,930	.....	80	3,010	289
.....	5,631	6,452	.....	3,731	.....	.....	3,731	290
400	3,000	6,059	760	1,820	.....	.....	2,580	291
.....	7,404	15,681	4,871	7,190	900	.....	12,961	292
.....	2,493	11,474	7,171	1,093	.....	850	9,114	293
.....	261	4,146	1,138	1,215	325	1,652	4,330	294
.....	1,766	6,833	1,760	1,766	2,538	198	6,262	295
.....	3,159	5,071	4,016	2,525	.....	165	6,706	296
6,899	1,000	8,279	.....	.....	221	6	227	297
10,252	850	11,123	.....	.....	1,949	.....	1,949	298
50	500	1,764	621	500	.....	.....	1,121	299
....	8,573	10,721	1,138	9,604	7,513	170	18,425	300
.....	.....	494	341	.....	.....	.....	341	301
.....	.....	1,485	1,144	.....	12	260	1,416	302
.....	2,599	6,670	.....	2,346	.....	82	2,428	303
.....	753	6,943	1,356	400	.....	1,386	3,142	304
.....	3,937	6,313	23	2,338	2,607	.....	4,968	305
.....	5,829	24,071	2,917	38,818	.....	3,548	45,285	306
.....	1,430	7,331	2,959	500	.....	621	4,080	307
.....	2,375	6,379	1,496	4,272	.....	.....	5,768	308
.....	893	3,193	1,503	683	600	129	2,915	309
1,818	1,050	9,585	3,643	8,547	.....	.....	12,190	310
.....	1,350	3,216	1,501	.....	.....	20	1,521	311
....	.....	676	.....	.....	.....	.....	.....	312

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
313. Monck, Muskoka	813	3,094	17	.....	.....	700	.....
314. Monmouth, Haliburton	206	1,862	.....	.....	10	.....	.....
315. Mono, Dufferin	813	11,763	35	.....	12	1,800	.....
316. Montague, Lanark	323	7,574	16	.....	.....	700	.....
317. Monteagle and Herschel, Hastings	.....	2,839	70	.....	.....	.....	.....
318. Moore, Lambton	2,489	22,592	406	.....	.....	.....	2,119
319. Mornington, Perth	2,128	18,454	259	.....	25	1,000	2,000
320. Morris, Huron	2,616	10,183	48	.....	.....	500	.....
321. Morrison, Muskoka	903	1,592	34	.....	.....	245	.....
322. Mosa, Middlesex	1,504	13,683	.....	.....	.....	4,545	.....
323. Moulton, Haldimand	.....	6,051	1	100	246	1,387	.....
324. Mountain, Dundas	2,273	17,369	296	520	.....	5,050	1,490
325. Mulmur, Dufferin	1,247	11,248	32	.....	.....	1,900	.....
326. Murray, Northumberland	2,056	10,031	76	.....	.....	750	.....
327. Muskoka, Muskoka	540	1,901	.....	.....	.....	.....	.....
328. Nairn, Hyman and Lorne, Algoma	428	1,185	75	.....	.....	.....	.....
329. Nassagaweya, Halton	1,185	7,457	30	.....	520	.....	.....
330. Neebing, Thunder Bay	992	3,723	33	.....	64	.....	1,500
331. Nelson, Halton	369	11,609	65	4,490	1,024	2,134	.....
332. Nepean, Carleton	417	19,071	203	.....	476	.....	13,641
333. Niagara, Lincoln	801	7,891	96	.....	13	2,200	.....
334. Nichol, Wellington	2,950	7,040	88	.....	29	.....	1,100
335. Nipissing, Parry Sound	7	1,351	42	.....	.....	.....	600
336. Nissouri E., Oxford	1,005	14,112	355	.....	21	2,000	.....
337. Nissouri W., Middlesex	8,045	19,887	110	.....	22	5,360	.....
338. Normanby, Grey	1,424	14,562	283	.....	.....	225	.....
339. Norwich N., Oxford	1,305	13,845	34	.....	4	1,500	409
340. Norwich S., Oxford	429	11,473	45	.....	8	2,000	.....
341. Nottawasaga, Simcoe	1,989	21,684	249	.....	.....	2,000	.....
342. Oakland, Brant	537	3,381	.....	.....	194	525	.....
343. Oakley, Muskoka	72	994	.....	.....	.....	.....	.....
344. Olden, Frontenac	450	4,654	12	115	.....	.....	.....
345. Oliver, Thunder Bay	335	2,183	75	.....	14	213	.....
346. Oneida, Haldimand	1,242	6,400	.....	.....	.....	.....	.....
347. Onondaga, Brant	747	5,588	57	4	.....	.....	2,500
348. Ops, Victoria	6,201	14,058	.....	.....	54	.....	1,000
349. Orford, Kent	5,066	14,368	67	.....	.....	4,000	2,008
350. Orillia, Simcoe	381	11,746	29	.....	.....	5,000	.....
351. Oro, Simcoe	2,032	12,497	47	.....	22	.....	.....
352. Osgoode, Carleton	1,945	16,543	823	.....	265	3,900	10,396
353. Osnabruck, Stormont	677	16,352	187	.....	.....	6,700	530
354. Oso, Frontenac	218	3,786	111	.....	.....	.....	.....
355. Osprey, Grey	68	9,652	40	.....	.....	1,000	.....
356. Otonabee, Peterborough	2,494	16,569	57	.....	14	.....	.....
357. Oxford-on-Rideau, Grenville	955	10,188	64	.....	13	1,800	.....
358. Oxford E., Oxford	2,418	11,319	26	.....	129	.....	1,536
359. Oxford N., Oxford	1,348	7,355	120	.....	39	.....	.....
360. Oxford W., Oxford	1,701	10,297	711	.....	215	.....	2,005
361. Pakenham, Lanark	725	7,711	223	.....	.....	.....	16,500
362. Palmerston and Canonto, Frontenac	470	2,298	64	.....	.....	.....	.....
363. Papineau, Nipissing	112	806	.....	.....	.....	6	.....
364. Peel, Wellington	1,066	18,572	103	.....	.....	1,962	.....

TOWNSHIP MUNICIPALIES.

ASSETS AND LIABILITIES, 1902.

Disbursements, 1902.											
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
26	4,650	260	136	1,390	.....	.....	.....	1,288	.....	.....	313
40	2,118	220	120	60	.....	32	212	834	.....	50	314
54	14,477	698	277	2,204	.....	26	1,914	6,780	.....	.....	315
.....	8,613	437	482	664	7	8	1,641	4,250	154	.....	316
432	3,341	290	76	365	.....	36	263	1,978	.....	.....	317
690	28,296	1,324	438	2,909	.....	376	3,077	5,173	922	.....	318
1,239	25,105	784	348	4,473	.....	38	3,653	7,047	1,004	.....	319
234	13,581	855	98	1,481	.....	.....	1,948	4,419	7	.....	320
23	2,797	197	102	238	245	15	.....	821	.....	.....	321
297	20,029	709	256	1,983	.....	82	3,733	4,139	316	.....	322
142	7,927	330	133	251	.....	84	997	2,586	312	.....	323
.....	26,998	433	324	7,058	.....	105	2,817	7,425	1,110	124	324
121	14,548	732	295	1,851	85	61	1,925	5,792	.....	.....	325
442	13,355	738	781	1,778	.....	74	1,609	5,079	.....	.....	326
27	2,468	276	72	256	.....	70	.....	1,212	.....	.....	327
.....	1,688	380	59	.....	.....	5	.....	641	.....	39	328
211	9,403	604	191	1,848	.....	263	1,283	3,452	.....	39	329
116	6,428	688	441	749	1,559	139	.....	556	.....	417	330
106	19,797	962	320	2,988	.....	360	2,104	5,771	.....	4,230	331
*1,770	35,578	1,268	695	14,623	27	110	3,735	8,972	1,320	.....	332
50	11,051	1,054	130	768	.....	5	2,011	3,221	.....	.....	333
132	11,339	658	131	553	.....	.....	2,228	6,021	.....	.....	334
.....	2,000	313	72	67	7	4	.....	1,319	.....	.....	335
254	17,747	622	200	4,155	75	.....	3,892	4,467	6	.....	336
135	33,559	1,050	136	6,712	360	63	4,376	5,296	53	.....	337
371	16,865	774	279	2,771	225	10	2,555	8,035	.....	.....	338
82	17,179	643	146	3,205	.....	55	2,835	4,459	637	.....	339
66	14,021	518	137	2,952	166	27	2,130	4,285	49	.....	340
162	26,084	1,545	2,122	2,950	.....	64	4,939	9,541	.....	1,294	341
27	4,664	294	53	737	37	101	524	1,540	.....	.....	342
43	1,109	189	46	387	.....	19	.....	334	.....	.....	343
89	5,320	395	103	156	.....	45	2,075	2,362	.....	115	344
4	2,824	249	127	476	.....	10	.....	827	.....	390	345
.....	7,642	384	125	420	.....	142	1,970	3,175	.....	.....	346
89	8,985	478	139	3,365	.....	176	1,041	2,232	.....	3	347
560	21,873	758	310	3,483	.....	499	3,509	4,959	394	544	348
664	26,173	1,111	1,200	3,170	.....	396	2,449	4,289	.....	.....	349
435	17,591	1,226	646	3,332	.....	148	1,872	5,899	.....	.....	350
601	15,199	825	377	1,116	.....	115	2,994	6,764	.....	.....	351
741	34,613	1,209	356	4,313	.....	20	3,359	10,319	1,079	5,907	352
165	24,611	874	1,341	3,809	.....	384	1,889	9,095	1,335	.....	353
12	4,127	285	84	192	.....	55	514	2,350	.....	.....	354
.....	10,760	812	182	1,019	.....	82	.....	5,396	.....	.....	355
304	19,438	501	187	3,513	.....	298	5,234	5,341	96	.....	356
12	13,032	729	268	1,328	30	34	2,093	5,159	488	25	357
38	15,466	536	73	2,020	.....	10	2,906	4,107	64	.....	358
17	8,879	469	89	1,123	.....	31	1,690	2,674	40	.....	359
147	15,076	768	151	2,596	1,100	251	2,108	3,654	1,133	.....	360
713	25,872	666	216	1,053	.....	83	1,448	2,910	.....	.....	361
3	2,835	291	22	222	.....	30	159	1,406	.....	.....	362
.....	924	208	18	3	.....	.....	.....	695	.....	.....	363
158	21,861	907	203	3,759	.....	7	5,412	8,288	66	.....	364

* Including $813, premium on debentures sold, and $307 from other municipalities as share of debt.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand	Taxes in arrears.
	$	$	$	$	$	$	$
313. Monck	129	700	69	16	3,988	662	696
314. Monmouth	200	.....	108	134	1,970	148	2,548
315. Mono	.....	1,800	34	86	13,819	658	.....
316. Montague	...	300	6	484	8,433	180	746
317. Monteagle and Herschel	107	70	47	28	3,260	81	3,338
318. Moore	5,683	3,000	1,946	*1,871	26,719	1,577	18,026
319. Mornington	2,122	1,000	1,285	1,279	23,033	2,072	.....
320. Morris	600	500	146	63	10,117	3,464	265
321. Morrison	.....	.....	.....	.....	1,618	1,179	402
322. Mosa	1,894	3,100	289	794	17,295	2,734	6,155
323. Moulton	.....	2,705	146	383	7,927	.....	.....
324. Mountain	270	3,206	145	94	23,111	3,887	729
325. Mulmur	.....	1,900	53	180	12,874	1,674	1,059
326. Murray	.....	750	17	530	11,356	1,999	1,022
327. Muskoka	.....	.....	.....	228	2,114	354	700
328. Nairn, Hyman and Lorne	.....	300	24	4	1,552	136	455
329. Nassagaweya	.....	.....	.....	170	7,850	1,553	2,713
330. Neebing	.....	550	596	280	5,975	453	5,715
331. Nelson	.....	2,134	66	145	19,080	717	774
332. Nepean	594	.....	291	†2,420	34,055	1,523	18,932
333. Niagara	.....	2,200	57	592	10,038	1,013	3,438
334. Nichol	149	.....	31	195	9,966	1,373	3,426
335. Nipissing	79	.....	51	.....	1,912	88	1,263
336. Nissouri E	175	2,000	299	314	16,205	1,542	125
337. Nissouri W	.....	5,620	108	529	24.303	9,256	2,528
338. Normandy	.....	.....	.....	386	15,035	1,830	22
339. Norwich N	977	2,300	170	396	15,823	1,356	139
340. Norwich S	142	2,000	85	140	12,631	1.390	17
341. Nottawasaga	76	2,000	77	294	24,902	1,182	124
342. Oakland	500	.....	175	53	4,014	650	38
343. Oakley	.....	.....	.....	30	1,005	104	645
344. Olden	.....	.....	.....	53	5,304	16	786
345. Oliver	42	213	176	185	2,695	129	1,388
346. Oneida	.....	.....	.....	159	6,375	1,267	.....
347. Onondaga	501	.....	63	266	8,264	721	118
348. Ops	486	.....	323	118	15,383	6,490	145
349. Orford	1,562	8,125	549	‡2,276	25,127	1,046	5,399
350. Orillia	485	2,500	321	208	16,637	954	4,562
351. Oro	.....	.....	.....	66	12,257	2,942	2,618
352. Osgoode	1,844	3,000	949	1,611	33,966	647	.....
353. Osnabruck	938	.....	604	‖1,713	21,982	2,629	3,303
354. Oso	46	.....	8	94	3,628	499	1,428
355. Osprey	232	1,000	132	¶1,773	10,628	132	4,503
356. Otonabee	.....	.....	.....	353	15,523	3,915	4,462
357. Oxford-on-Rideau	.....	1,800	88	115	12,157	875	1,214
358 Oxford E	104	.....	37	42	9,899	5,567	56
359. Oxford N	261	.....	45	287	6,709	2,170	12
360. Oxford W	680	.....	136	63	12,640	2,436	382
361. Pakenham	854	15,400	761	1,082	24,473	1,399	1,154
362. Palmerston and Canonto	100	.....	70	56	2,356	479	476
363. Papineau	.....	.....	.....	.....	924	.....	413
364. Peel	378	1,962	222	338	21,542	319	52

* Including $667 drainage rates refunded.
† Including $2,221 Board of Health expenses largely on account of small-pox visitation.
‡ Including $2,000 bonus to L. E. & D. R. Ry.
‖ Including $407 Board of Health expenses, and $1,073 paid to other municipalities as share of debt.
¶ Including $1,481 Board of Health expenses mostly due to small-pox visitation.

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	1,520	2,878	.....	1,320	.....	114	1,434	313
170	952	3,818	1,332	800	400	47	2,579	314
.....	17	675	.....	.....	.....	339	339	315
.....	1,000	1,926	30	.....	700	.....	730	316
.....	675	4,094	2,899	675	.....	381	3,955	317
.....	25,459	45,062	7,437	24,209	78	3,538	35,262	318
.....	2,000	4,072	.....	31,694	.....	.....	31,694	319
.....	3,370	7,099	1,948	2,200	.....	.....	4,148	320
.....	245	1,826	811	.....	245	.....	1,056	321
.....	518	9,407	4,146	3,664	3,945	659	12,414	322
4,112	.....	4,112	.....	.....	1,387	.....	1,387	323
124	2,013	6,753	1,016	1,220	6,020	485	8,741	324
9,000	600	12,333	1,844	.....	.....	.....	1,844	325
.....	2,053	5,074	1,865	.....	.....	27	1,892	326
.....	.....	1,054	665	.....	.....	175	840	327
139	.....	730	.....	.....	.....	10	10	328
9,080	1,269	14,615	.....	.....	.....	22	22	329
2,758	2,786	11,712	259	12,000	551	290	13,100	330
26,713	3,300	31,504	.....	.....	.....	.....	.....	331
9,500	10,535	40,490	12,566	19,122	.....	2,486	34,174	332
.....	154	4,605	4,376	.....	.....	141	4,517	333
.....	3,410	8,209	2,128	3,391	.....	254	5,773	334
.....	1,528	2,879	.....	1,521	.....	.....	1,521	335
.....	5,165	6,832	.....	5,159	.....	55	5,214	336
.....	360	12,144	5,395	.....	3,324	.....	8,719	337
.....	1,350	3,202	.....	.....	225	.....	225	338
.....	250	1,745	.....	1,282	.....	1,176	2,458	339
.....	2,500	3,907	14	526	.....	32	572	340
6,576	1,668	9,550	5,388	653	.....	.....	6,041	341
4,544	1,700	6,932	.....	3,000	525	.....	3,525	342
.....	.....	749	.....	.....	.....	39	39	343
.....	1,000	1,802	68	.....	.....	51	119	344
1,971	2,558	6,046	.....	3,358	.....	.....	3,358	345
.....	650	1,917	.....	.....	.....	.....	.....	346
3	3,300	4,142	.....	1,999	.....	.....	1,999	347
1,068	4,177	11,880	3,097	7,688	.....	1,090	11,875	348
.....	7,971	14,416	.....	10,855	.....	3,902	14,757	349
.....	3,657	9,173	1,797	2,682	2,500	339	7,318	350
.....	1,350	6,910	2,995	.....	.....	25	3,020	351
21,707	5,950	28,304	.....	14,748	2,500	.....	17,248	352
.....	3,189	9,121	1,996	15,486	12,650	1,974	32,106	353
.....	551	2,478	512	.....	.....	49	561	354
.....	1,058	5,693	2,206	1,058	1,100	500	4,864	355
.....	3,500	11,877	5,251	.....	.....	466	5,717	356
448	6,000	8,537	2,093	832	.....	.....	2,925	357
.....	600	6,223	6	2,265	.....	338	2,609	358
.....	1,475	3,657	.....	1,846	.....	2,330	4,176	359
.....	1,712	4,530	.....	4,043	.....	.....	4,043	360
.....	3,100	5,653	.....	17,746	.....	295	18,041	361
.....	200	1,155	203	1,300	.....	.....	1,503	362
.....	.....	413	362	.....	6	14	382	363
.....	206	577	.....	3,248	.....	171	3,419	364

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902. Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
365. Pelee Island, Essex	547	7,614	33			3,825	
366. Pelham, Welland	404	10,410	2	1,336	740	909	
367. Pembroke, Renfrew	281	1,226				930	
368. Percy, Northumberland	540	11,960	317			3,000	
369. Perry, Parry Sound	1,138	4,337	155				
370. Petewawa, Renfrew	234	1,656	25				
371. Pickering, Ontario		27,123	394			8,800	
372. Pilkington, Wellington	420	7,354	40				2,200
373. Pittsburg, Frontenac	5,723	13,151	148		20		
374. Plantagenet N., Prescott	1,483	11,147	399				
375. Plantagenet S., Prescott	428	9,492	165			600	650
376. Plummer Additional, Algoma	876	5,495	211			1,500	4,000
377. Plympton, Lambton	1,259	20,392	95				
378. Portland, Frontenac	962	7,889	80	700	15		
379. Prince, Algoma	44	948	2			200	
380. Proton, Grey	3,114	11,607	97		108		1,900
381. Puslinch, Wellington	979	11,631	153	4,938	453		
382. Radcliffe, Renfrew	1	1,288	64			212	
383. Raglan, Renfrew	1	2,029	19			368	
384. Rainham, Haldimand	510	5,727	100	729	203		
385. Raleigh, Kent	63	33,343	197		149	3,364	
386. Rama, Ontario	288	3,574	10			1,400	
387. Ramsay, Lanark	2,678	11,817	200		426		
388. Ratter and Dunnett, Nipissing	42	2,416	55			672	
389. Rawdon, Hastings	122	13,237	83				1,000
390. Rayside, Algoma	144	1,431	84			1,238	
391. Reach, Ontario	312	13,289	62	1,664		5,356	
392. Richmond, Lennox and Addington	72	11,015	22	5,366	535	1,000	
393. Rochester, Essex	1,255	15,298	188			3,500	599
394. Rolph, Buchanan and Wylie, Renfrew	120	1,908	30				
395. Romney, Kent	4,445	15,205	650		73	4,718	7,579
396. Ross, Renfrew	819	5,854	27				
397. Roxborough, Stormont	549	19,236	263	7,267	412	19,645	25,508
398. Russell, Russell	6,463	17,802	245		42		19,700
399. Ryde, Muskoka	95	1,389	9				300
400. Ryerson, Parry Sound	368	2,505	2	142			
401. St Joseph, Algoma	458	3,696	401				
402. St. Vincent, Grey	1,679	15,379	15			1,800	2,800
403. Salter, May and 116, Algoma	1,284	1,641	134		21		
404. Saltfleet, Wentworth	3,001	15,857	85	300	338	5,000	2,850
405. Sandfield, Manitoulin	177	753					
406. Sandwich E., Essex	167	14,179	544			3,000	551
407. Sandwich S., Essex	915	10,882	192				1,079
408. Sandwich W., Essex	221	11,660	480			535	
409. Sarawak, Grey	158	5,792	40	671	453	1,240	
410. Sarnia, Lambton	83	15,375	74		11	1,000	284
411. Saugeen, Bruce	702	5,781	20		7		
412. Sault Ste. Marie, Algoma	837	16,868	175			8,000	
413. Scarborough, York	1,429	17,872	417	252	597		
414. Schreiber, Thunder Bay	85	1,753	246				
415. Scott, Ontario	1,159	9,468	53		226	1,969	
416. Scugog, Ontario	228	2,074	24			50	

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
*1,560	13,579	726	412	1,452	.....	10	.....	1,419	3,772	.....	365
11	13,812	539	255	2,153	18	7	3,774	4,853	.....	1,194	366
10	2,447	270	125	521	.....	10	440	936	.....	.....	367
.....	15,817	587	358	3,445	161	451	1,578	5,429	.....	.....	368
181	5,811	357	63	245	.....	109	.....	2,327	.....	.....	369
422	2,337	199	63	284	.....	16	280	985	.....	.....	370
†2,086	38,403	1,338	556	9,080	.....	815	5,046	9,862	.....	.....	371
127	10,141	521	247	1,236	.....	15	1,713	5,711	.....	.....	372
25	19,067	616	170	3,714	.....	55	5,124	4,916	.....	.....	373
84	13,113	419	285	2,408	.....	133	1,486	6,900	.....	.....	374
12	11,347	874	241	1,194	.....	5	1,268	5,189	496	.....	375
18	12,100	405	101	1,870	.....	140	.....	5,656	.....	.....	376
64	21,810	886	360	3 534	.....	293	3,028	6,841	375	.....	377
.....	9,646	456	231	1,219	.....	139	3,725	3,757	.....	.....	378
4	1,198	227	20	119	.....	22	.....	441	.....	.....	379
354	17,180	650	616	2,323	.....	69	3,416	6,787	974	288	380
163	18,317	759	179	1,311	.....	79	2,842	5,420	.....	5,016	381
10	1,575	189	46	92	.....	.....	80	666	.....	.....	382
1,112	3,529	397	86	436	.....	.....	117	1,069	.....	400	383
46	7,315	336	97	360	.....	81	1,898	2,873	.....	787	384
314	37,430	1,104	1,058	2,104	.....	251	4,636	9,846	.....	.....	385
.....	5,272	537	106	912	122	10	195	1,706	.....	.....	386
65	15,186	645	268	2,084	.....	745	2,117	4,728	.....	1,018	387
.....	3,185	258	17	272	.....	.....	.....	1,377	.....	.....	388
372	14,814	675	170	819	.....	202	2,625	8,000	.....	.....	389
.....	2,897	162	173	245	42	.....	.....	1,056	3	.....	390
47	20,730	950	397	2,324	.....	606	5,554	6,093	.....	.....	391
.....	18.010	656	1,453	1,571	.....	120	2,955	4,882	.....	5,266	392
381	21,221	1,064	357	1,338	.....	100	2,763	5 005	1,426	.....	393
30	2,088	195	55	7	.....	.....	126	1,458	.....	100	394
370	33,040	1,185	234	3,207	.....	42	1,116	7,854	2,818	.....	395
248	6,948	317	150	850	.....	.....	1,117	3,244	.....	.....	396
‡7,257	80,137	562	502	2,295	.....	189	1,771	7,200	29, 003	7,104	397
450	44,702	1,363	865	3,265	.....	12	1,630	6,239	10,566	376	398
5	1,798	220	56	122	.....	16	.....	1,101	.....	.....	399
.....	3,017	216	37	274	17	6	.....	1,314	.....	.....	400
.....	4 555	348	148	1,266	20	12	.....	1,875	.....	100	401
444	22,117	966	346	5,467	.....	389	2,205	8,677	.....	.....	402
697	3,777	235	72	537	.....	.....	.....	1,805	.....	669	403
240	27,671	849	1,255	6,415	53	200	2,690	5,410	.....	2,013	404
.....	930	92	32	.....	.....	.....	.....	727	.....	.....	405
16	18,457	1,245	246	1,281	.....	243	1,213	4,161	1,651	.....	406
43	13,111	485	154	1,234	.....	76	943	3,199	609	.....	407
.....	12,896	598	118	1,993	.....	158	1,166	5,057	535	.....	408
338	8,692	514	209	989	2	80	393	1,658	.....	1,010	409
190	17.017	820	204	1,469	400	232	1,475	4 101	613	.....	410
217	6,727	526	74	604	.....	.....	1,713	2,557	.....	.....	411
62	25,942	2,985	1,501	8,098	100	189	.....	4,367	.....	.....	412
15	20,582	950	1,070	4,567	400	53	4,414	6,552	.....	.....	413
.....	2,084	104	43	14	.....	.....	.....	1,246	.....	.....	414
47	12,922	746	309	2,342	.....	747	1,885	3,981	.....	.....	415
.....	2,376	181	60	216	.....	48	451	1,194	.....	.....	416

* Including $1,500 from Ontario Government in aid of drainage.
† Including $2,036 for road allowances.
‡ Including $7,114 from other municipalities as share of debt.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
365. Pelee Island	1,301	700	1,387	463	11,642	1,937	6,481
366. Pelham	.....	800	22	137	13,752	60	780
367. Pembroke	.....	.....	.....	145	2,447	.....	1,216
368. Percy	219	3,000	105	337	15,670	147	312
369. Perry	349	..	38	557	4,045	1,766	1,660
370. Petewawa	56	.....	8	16	1,907	430	369
371. Pickering	1,285	7,763	485	486	36,716	1,687	1,594
372. Pilkington	.....	430	14	116	10,003	138	4,285
373. Pittsburg	.....	.....	.....	22	14,617	4,450	1,877
374. Plantagenet N	442	.....	91	646	12,810	303	7,389
375. Plantagenet S	104	.....	135	559	10,065	1,282	3,812
376. Plummer Additional	200	1,500	246	759	10,877	1,223	228
377. Plympton	3,500	.....	634	684	20,135	1,675	6,932
378. Portland	.....	.....	.....	70	9,597	49	4,417
379. Prince	...	200	.....	5	1,034	164	2,465
380. Proton	506	.....	310	282	16,221	959	1,922
381. Puslinch	.....	.....	.....	1,064	16,670	1,647	2,050
382. Radcliffe	.....	180	.....	37	1,290	285	846
383. Raglan	.....	638	4	161	3,308	221	1,005
384. Rainham	.....	.....	.....	155	6,587	728	25
385. Raleigh	9,957	3,891	3,618	965	37,430	.....	18,142
386. Rama	.....	1,194	30	21	4,833	439	1,939
387. Ramsay	.....	.....	460	511	12,576	2,610	19
388. Ratter and Dunnett	93	651	74	416	3,158	27	796
389. Rawdon	682	.....	183	100	13,456	1,358	4,729
390. Rayside	.....	911	47	153	2,792	105	1,549
391. Reach	.....	4,500	118	102	20,644	86	513
392. Richmond	.....	950	26	63	17,942	68	4,344
393. Rochester	2,105	4,500	600	266	19,524	1,697	5,924
394. Rolph	.....	.....	56	69	2,066	22	2,199
395. Romney	6,565	2,109	2,351	*3,259	30,740	2,300	13,313
396. Ross	100	.....	18	249	6,045	903	.....
397. Roxborough	4,558	20,610	2,851	†3,492	80,137	.....	10,000
398. Russell	1,296	5,604	1,202	928	33,346	11,356	1,257
399. Ryde	42	.....	11	5	1,573	225	727
400. Ryerson	171	.....	42	49	2,126	891	1,784
401. St. Joseph	114	100	138	112	4,233	322	1,630
402. St. Vincent	412	1,800	111	166	20,539	1,578	202
403. Salter, May and 116	.....	24	1	275	3,618	159	879
404. Saltfleet	.....	5,000	370	426	24,681	2,990	.....
405. Sandfield	.....	.....	.....	18	864	66	265
406. Sandwich E	3,662	3,000	799	628	18,129	328	14,515
407. Sandwich S	3,245	1,625	408	564	12,542	569	7,787
408. Sandwich W	2,262	.....	250	538	12,675	221	11,699
409. Sarawak	904	1,840	729	45	8,378	319	669
410. Sarnia	2,684	2,500	1,082	924	16,504	513	2,190
411. Saugeen	127	.....	13	100	5,714	1,013	5
412. Sault Ste. Marie	.....	5,000	296	617	23,153	2,789	29,797
413. Scarborough	443	.....	447	614	19,510	1,072	957
414. Schreiber	.....	.....	.....	166	1,573	511	.....
415. Scott	.....	1,969	72	196	12,247	675	20
416. Scugog	.....	50	2	3	2,205	171	.....

* Including $3,031 paid to Tilbury W. and Tilbury E. Tps. as share of debts.
† Including $871 Board of Health and $1,704 to other municipalities as share of debt.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County, levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	37,450	45,868	1,000	21,706	4,767	300	27,773	365
18,000	4,638	23,478	.....	.....	109	250	359	366
.....	200	1,416	1,045	.....	930	.....	1,975	367
.....	8,833	9,292	.....	333	.....	16	349	368
.....	1,379	4,805	883	1,255	.....	81	2,219	369
.....	90	889	.....	90	.....	.....	90	370
.....	4,494	7,775	.....	5,036	2,890	150	8,076	371
.....	2,200	6,623	2,987	2,200	.....	108	5,295	372
.....	2,400	8,727	5,210	.....	.....	272	5,482	373
.....	2,366	10,058	4,704	1,676	.....	1,917	8,297	374
.....	1,840	6,934	3,899	1,074	1,550	1,004	7,527	375
.....	4,400	5,851	1,084	3,800	.....	.....	4,884	376
.....	11,690	20,297	2,528	9,957	.....	177	12,662	377
2,250	1,000	7,716	3,660	.....	.....	.....	3,660	378
.....	.....	2,629	.....	.....	.....	.....	.....	379
1,875	3,967	8,723	.....	7,879	181	80	8,140	380
10,153	2,500	16,350	1,501	.....	.....	95	1,596	381
.....	.....	1,131	809	.....	212	.....	1,021	382
400	.....	1,626	1,047	.....	.....	227	1,274	383
4,652	750	6,155	.....	.....	415	.....	415	384
.....	67,519	85,661	.....	81,337	3,364	8,810	93,511	385
.....	800	3,178	1,306	.....	824	110	2,240	386
12,068	500	15,197	325	11,500	.....	.....	11,825	387
.....	1,346	2,169	760	1,346	21	.....	2,127	388
.....	3,355	9,442	4,625	2,110	.....	60	6,795	389
.....	640	2,294	565	.....	663	38	1,266	390
.....	2,655	3,254	.....	.....	856	110	966	391
17,495	2,500	24,407	3,068	.....	1,000	2	4,070	392
.....	33	7,654	817	7,485	2,000	142	10,444	393
307	1,238	3,766	1,586	1,400	.....	373	3,359	394
.....	6,769	22,382	2,366	49,166	2,609	284	54,405	395
.....	1,400	2,303	.....	200	.....	.....	200	396
7,104	869	17,973	2,772	70,779	7,859	4,244	85,654	397
1,782	1,487	15,882	1,309	43,870	.....	.....	45,179	398
.....	1,846	2,798	425	446	.....	220	1,091	399
.....	451	3,126	1,401	451	.....	115	1,967	400
200	2,663	4,815	700	1,883	.....	102	2,685	401
.....	4,174	5,954	.....	4,155	.....	74	4,229	402
1,069	1,500	3,607	300	1,500	.....	75	1,875	403
8,946	4,715	16,651	262	8,850	.....	.....	9,112	404
.....	.....	331	104	.....	.....	15	119	405
.....	7,914	22,757	5,618	10,159	3,000	.....	18,777	406
.....	5,400	13,756	2,697	5,521	.....	1,051	9,269	407
.....	1,000	12,920	5,940	2,596	535	1,780	10,851	408
8,051	2,056	11,095	.....	13,917	240	185	14,342	409
.....	12,996	15,699	126	20,953	.....	72	21,151	410
.....	147	1,165	20	134	.....	45	199	411
.....	875	33,461	6,212	.....	6,000	1,060	13,272	412
13,129	8,865	24,023	.....	7,765	.....	.....	7,765	413
.....	.....	511	.....	.....	.....	.....	.....	414
4,761	920	6,376	.....	585	.....	.....	585	415
.....	1,503	1,674	.....	.....	.....	96	96	416

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
417. Sebastopol, Renfrew	47	817	24				
418. Seneca, Haldimand	1,314	8,278	76		12		
419. Seymour, Northumberland	204	14,030	22			3,353	
420. Sheffield, Lennox and Addington	195	8,144	121				
421. Sherbourne, McClintock, etc., Halib'n	55	723	43	55	43		225
422. Sherbrooke, Haldimand	15	1,235	7	500	97		
423. Sherbrooke, S. Lanark	185	2,220	49			328	
424. Shuniah, Thunder Bay	544	1,906			63		
425. Sidney, Hastings	592	18,003	160			2,094	
426. Smith, Peterborough	2,146	12,890	120		74		1,400
427. Snowdon, Haliburton		2,274				54	
428. Sombra, Lambton	2,662	23,596	267	281	48		400
429. Somerville, Victoria	104	7,634	60		248		
430. Sophiasburg, Prince Edward	212	7,909	48	100	110	500	
431. Southwold, Elgin	5,953	23,695	196		6	4,000	
432. Springer, Nipissing	138	2,732	242			1,400	
433. Stafford, Renfrew	403	2,966					
434. Stamford, Welland	1,273	9,453	209		33	1,500	
435. Stanhope, Haliburton	356	1,232					
436. Stanley, Huron	780	10,779	113	550	9	200	
437. Stephen, Huron	331	14,166	351			1,700	
438. Stephenson, Muskoka	127	4,367	100	500		1,164	
439. Stisted, Muskoka	209	2,447	6	30	15	200	
440. Storrington, Frontenac	150	8,419	43		22		
441. Strong, Parry Sound	536	1,605					
442. Sullivan, Grey	229	11,823	27			2,071	
443. Sunnidale, Simcoe	1,286	8,401	142			1,800	700
444. Sydenham, Grey		14,467	49				
445. Tay, Simcoe	62	11,708	97		74		
446. Tecumseth, Simcoe	2,847	18,868	84	48	21	2,000	
447. Tehkummah, Manitoulin	151	1,226					
448. Thessalon, Algoma	275	1,748					
449. Thorah, Ontario		7,323	40	592	1,550	900	
450. Thorold, Welland	183	9,087	76				
451. Thurlow, Hastings	1	18,205	134			700	
452. Tilbury E., Kent	1,789	30,515	20			3,550	8,287
453. Tilbury N., Essex	6,914	11,671	108		130		1,572
454. Tilbury W., Essex	7,382	14,172	387		590		
455. Tiny, Simcoe		12,454	16			1,953	
456. Torbolton, Carleton	252	3,507					
457. Toronto, Peel	1,901	21,294	325	11,086	1,046	2,000	
458. Toronto Gore, Peel	432	5,683	28		144	1,072	
459. Tossorontio, Simcoe	651	6,663	112				
460. Townsend, Norfolk	3,752	15,737	5		95		
461. Trafalgar, Halton	699	13,284	38		2,298	4,000	
462. Tuckersmith, Huron	4,640	11,270	70	195	1,077	678	
463. Tudor and Cashel, Hastings	510	2,440	67				
464. Turnberry, Huron	1,892	6,839	16		18		
465. Tyendinaga, Hastings	1,835	14,959	173		24		
466. Usborne, Huron	3,201	10,839	86				
467. Uxbridge, Ontario	183	11,211	92		342	2,111	
468. Van Horne, Rainy River	161	1,015	48				

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Disbursements, 1902.											
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of school and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	888	111	20	35	.....	.....	147	232	.....	.....	417
4	9,684	485	154	1,160	.....	107	2,446	3,719	.....	.....	418
.....	17,609	692	355	3,153	.....	180	1,979	5,131	.....	.....	419
16	8,476	652	250	848	.....	116	1,633	3,760	.....	.....	420
358	1,502	184	76	106	196	5	63	331	.....	.....	421
29	1,883	157	31	29	.....	65	333	607	.....	532	422
32	2,814	277	93	232	.....	5	257	1,471	.....	.....	423
505	3,018	584	252	630	.....	.....	.....	.....	.....	63	424
630	21,479	1,171	232	2,871	.....	596	8,011	6,711	.....	.....	425
.....	16,630	566	148	3,193	.....	351	3,953	5,822	.....	.....	426
475	2,803	246	94	189	.....	2	434	990	.....	.....	427
498	27,752	1,109	681	2,306	.....	81	1,990	7,201	2,831	.....	428
.....	8,046	486	205	817	.....	235	565	3,514	.....	1,147	429
4	8,883	465	259	407	150	122	2,001	4,345	.....	110	430
121	33,971	1,446	503	5,520	.....	38	5,816	8,131	272	.....	431
389	4,901	486	241	753	.....	.....	.....	1,835	40	.....	432
6	3,375	184	63	460	.....	.....	464	1,710	.....	.....	433
227	12,695	544	416	3,164	.....	74	1,500	4,163	.....	.....	434
230	1,818	148	53	236	.....	13	152	660	.....	.....	435
1,165	13,596	668	318	1,957	.....	34	2,017	4,698	249	2,898	436
673	17,221	801	313	1,949	.....	62	2,139	6,336	9	.....	437
1,098	7,356	388	145	2,492	.....	20	.....	1,897	.....	739	438
95	3,002	314	241	561	.....	114	.....	1,125	.....	90	439
.....	8,634	412	128	419	.....	67	3,890	3,335	.....	.....	440
19	2,160	252	68	215	.....	.....	.....	955	.....	.....	441
176	14,326	515	185	2,471	.....	272	1,984	6,697	.....	.....	442
708	13,037	1,017	273	1,866	.....	5	1,635	4,961	179	.....	443
86	14,602	877	366	3,144	.....	405	1,739	6,180	30	.....	444
318	12,259	848	393	1,648	.....	258	1,542	5,737	.....	.....	445
142	24,010	843	295	4,972	.....	27	3,903	6,919	48	.....	446
.....	1,377	168	55	380	.....	5	.....	638	.....	.....	447
.....	2,023	204	40	500	.....	.....	.....	634	.....	.....	448
332	10,737	641	326	3,130	250	174	888	2,255	7	.....	449
.....	9,346	516	279	510	.....	49	2,080	4,015	.....	.....	450
630	19,670	718	411	1,693	.....	1,248	8,122	6,250	.....	.....	451
*4,484	48,645	1,186	581	2,457	450	237	2,270	6,544	4,245	.....	452
146	20,541	942	192	1,118	.....	329	936	4,756	3,386	.....	453
†2,652	25,183	884	1,629	1,429	.....	51	865	2,846	426	.....	454
575	14,998	970	268	1,313	.....	134	1,716	5,522	.....	.....	455
.....	3,759	280	98	333	.....	.....	730	1,113	.....	.....	456
92	37,744	1,252	705	3,721	.....	49	4,795	8,370	.....	11,039	457
54	7,413	488	215	1,323	.....	10	1,407	2,089	.....	3	458
166	7,592	474	156	1,244	.....	141	1,385	3,505	43	.....	459
183	19,772	1,028	195	1,542	3,248	32	4,275	6,989	.....	.....	460
31	20,350	837	360	3,633	370	335	3,082	4,085	.....	.....	461
121	18,051	686	147	4,832	.....	.....	2,116	4,327	735	678	462
514	3,531	331	100	753	.....	5	188	1,712	.....	.....	463
52	8,817	662	80	918	.....	10	1,223	3,815	.....	48	464
536	17,527	1,299	141	1,260	.....	450	5,580	6,769	.....	.....	465
18	14,144	572	94	2,033	.....	5	2,216	4,592	.....	.....	466
41	13,980	904	295	2,028	.....	374	1,347	4,542	.....	1,202	467
7	1,231	212	40	83	.....	8	.....	375	.....	.....	468

* Including $3,020 from Provincial Government in aid of drainage.
† Including $2,650 from Romney Tp. as share of debt.

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
417. Sebastopol	.....	.....	.....	10	555	333	822
418. Seneca	.....	.....	.....	236	8,307	1,377	3
419. Seymour	.....	4,158	85	738	16,471	1,138	1,514
420. Sheffield, Lennox & Ad'gt'n	309	.....	317	83	7,968	508	1,592
421. Sherbourne, McClintock, etc.	54	.....	62	171	1,248	254	684
422. Sherbrooke	.....	.....	.....	36	1,790	93	373
423. Sherbrooke, S.	.....	328	10	62	2,735	79	582
424. Shuniah	.....	.....	375	344	2,248	770	6,391
425. Sidney	221	1,400	95	171	21,479	.....	12,228
426. Smith	299	.....	41	15	14,388	2,242	1,236
427. Snowdon	46	569	24	209	2,803	.....	1,703
428. Sombra	7,259	.....	1,475	660	25,593	2,159	20,362
429. Somerville	100	.....	536	257	7,862	184	6,383
430. Sophiasburg	.....	500	13	73	8,445	438	186
431. Southwold	1,449	4,000	237	222	27,634	6,337	2,641
432. Springer	436	.....	238	544	4,573	328	3,627
433. Stafford	.....	.....	.....	49	2,930	445	418
434. Stamford	375	1,500	298	647	12,681	14	3,695
435. Stanhope	27	.....	13	72	1,374	444	613
436. Stanley	.....	200	8	187	13,234	362	187
437. Stephen	1,725	1,700	295	1,246	16,575	646	121
438. Stephenson	500	700	132	94	7,107	249	2,195
439. Stisted	30	200	61	200	2,936	66	734
440. Storrington	220	.....	54	106	8,631	3	1,362
441. Strong	.....	.....	.....	21	1,511	649	1,398
442. Sullivan	50	2,000	70	82	14,326	.....	320
443. Sunnidale	225	1,800	221	212	12,394	643	1,980
444. Sydenham	70	566	118	340	13,835	767	.....
445. Tay	475	.....	170	346	11,417	842	9,417
446. Tecumseth	339	2,000	406	429	20,181	3,829	19
447. Tehkummah	.....	.....	.....	5	1,251	126	1,020
448. Thessalon	.....	234	10	146	1,768	255	655
449. Thorah	1,000	1,010	465	533	10,679	58	99
450. Thorold	.....	936	93	268	8,746	600	3,858
451. Thurlow	.....	700	13	79	19,234	436	5,354
452. Tilbury E.	11,722	7,808	6,913	1,338	45,751	2,894	28,238
453. Tilbury N.	2,988	.....	1,473	587	16,707	3,834	7,217
454. Tilbury W.	5,362	5,000	1,228	196	19,916	5,267	12,041
455. Tiny	956	1,964	1,966	189	14,998	.....	6,084
456. Torbolton	.....	.....	.....	29	2,583	1,176	2,191
457. Toronto	385	5,028	317	1,156	36,817	927	.....
458. Toronto Gore	208	1,074	122	123	7,062	351	9
459. Tossorontio	.....	.....	.....	56	7,004	588	108
460. Townsend	264	.....	45	133	17,751	2,021	675
461. Trafalgar	.....	4,000	91	1,029	17,822	2,528	6,477
462. Tuckersmith	835	.....	182	141	14,679	3,372	279
463. Tudor and Cashel	.....	.....	.....	7	3,096	435	2,598
464. Turnberry	.....	.....	.....	82	6,838	1,979	319
465. Tyendinaga	200	.....	10	63	15,772	1,755	144
466. Usborne	.....	.....	.....	61	9,573	4,571	17
467. Uxbridge	200	1,600	1,193	295	13,980	.....	1,169
468. Van Horne	.....	144	.....	.....	862	369	939

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	5	1,160	856	.....	.....	.....	856	417
.....	2,000	3,380	.....	.....	.....	.....	.....	418
.....	1,117	3,769	.....	.....	.....	1,361	1,361	419
.....	2,000	4,100	51	7,609	.....	649	8,309	420
.....	2,508	3,446	375	1,141	.....	520	2,036	421
1,892	600	2,958	.....	.....	.....	.....	.....	422
.....	.....	661	108	.....	.....	.....	108	423
2,150	4,500	13,811	.....	7,500	.....	408	7,908	424
.....	1,281	13,509	9,056	281	694	.....	10,031	425
.....	2,001	5,479	228	2,001	.....	73	2,302	426
.....	449	2,152	1,516	149	54	.....	1,719	427
.....	26,300	48,821	7,166	30,455	.....	1,695	39,316	428
7,595	1,200	15,362	2,911	10,800	.....	86	13,797	429
3,561	3,500	7,685	.....	.....	.....	421	421	430
.....	1,860	10,838	5,210	2,178	.....	125	7,513	431
.....	1,401	5,356	1,494	3,221	1,400	242	6,357	432
.....	625	1,488	15	.....	.....	114	129	433
.....	11,632	15,341	2,965	4,957	.....	612	8,534	434
.....	201	1,258	576	201	.....	45	822	435
2,348	1,690	4,587	.....	.....	.....	.....	.....	436
.....	4,226	4,993	.....	3,267	.....	.....	3,267	437
1,843	2,513	6,800	924	1,190	1,828	135	4,077	438
810	1,225	2,835	.....	960	.....	6	966	439
.....	1,000	2,365	587	980	.....	.....	1,567	440
.....	11	2,058	942	.....	.....	.....	942	441
.....	2,150	2,470	.....	400	71	237	708	442
.....	2,081	4,704	2,172	4,396	.....	100	6,668	443
.....	925	1,692	.....	325	.....	.....	325	444
.....	3,160	13,419	3,128	2,985	.....	300	6,413	445
688	.....	4,536	.....	8,366	.....	.....	8,366	446
.....	200	1,346	135	.....	.....	70	205	447
.....	675	1,585	.....	.....	266	.....	266	448
51,491	1,200	52,848	.....	6,000	.....	.....	6,000	449
.....	.....	4,458	3,441	.....	514	312	4,267	450
.....	2,000	7,790	4,003	.....	.....	92	4,095	451
.....	6,019	37,151	5,024	139,508	3,550	105	148,187	452
.....	562	11,613	2,392	28,627	.....	1,707	32,726	453
.....	7,884	25,192	952	28,648	6,362	344	36,306	454
.....	5,137	11,221	.....	46,006	1,504	.....	47,510	455
.....	.....	3,367	1,865	.....	.....	319	2,184	456
28,037	1,500	30,464	.....	1,895	.....	.....	1,895	457
3,503	1,015	4,878	.....	2,292	.....	40	2,332	458
.....	100	796	.....	.....	.....	.....	.....	459
.....	3,738	6,434	340	490	.....	.....	830	460
45,173	6,060	60,238	7,152	2,000	.....	380	9,532	461
17,683	760	22,094	.....	3,556	678	100	4,334	462
.....	.....	3,033	1,851	.....	.....	20	1,871	463
48	145	2,491	1,223	.....	.....	141	1,364	464
.....	834	2,733	.....	.....	.....	1,175	1,175	465
.....	625	5,213	2,216	.....	.....	390	2,606	466
9,111	1,390	11,670	.....	19,200	511	.....	19,711	467
.....	362	1,670	.....	.....	323	66	389	468

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Township Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
469. Vaughan, York	6,324	22,954	334	17,229	1,646	.....	.....
470. Verulam, Victoria	3,704	9,155	.....	.....	66	.....	.....
471. Vespra, Simcoe	1,528	11,702	22	.....	.....	.....	3,090
472. Wainfleet, Welland	236	10,787	40	.....	845	.....	460
473. Wallace, Perth	28	11,841	46	.....	275	639	.....
474. Walpole, Haldimand	869	20,263	137	.....	19	2,000	.....
475. Walsingham N., Norfolk	130	12,424	32	.....	.....	240	.....
476. Walsingham S., Norfolk	555	10,007	54	.....	5	500	.....
477. Warwick, Lambton	290	16,848	5	.....	.....	3,100	.....
478. Waterloo, Waterloo	.....	28,841	354	4,185	1,550	33	.....
479. Watt, Muskoka	220	2,143	18	582	.....	.....	.....
480. Wawanosh E., Huron	1,776	7,882	40	.....	12	1,000	.....
481. Wawanosh W., Huron	745	8,554	.....	.....	4	1,300	2,340
482. Wellesley, Waterloo	120	19,413	447	103	607	.....	.....
483. Westmeath, Renfrew	1,176	10,053	114	.....	.....	.....	217
484. Westminster, Middlesex	9,543	23,365	223	.....	49	3,500	.....
485. Whitby E., Ontario	589	10,761	149	.....	160	2,100	.....
486. Whitby, Ontario	512	12,682	128	7	11	2,150	.....
487. Whitchurch, York	864	11,977	27	235	700	1,500	.....
488. Widdifield, Nipissing	5	2,052	57	.....	.....	500	.....
489. Wilberforce and Algona N., Renfrew	1,099	3,033	74	.....	.....	.....	1,200
490. Williams E., Middlesex	5,412	9,013	41	.....	57	.....	.....
491. Williams W., Middlesex	2,191	8,883	.....	.....	.....	2,251	.....
492. Williamsburg, Dundas	3,152	18,905	6	.....	.....	4,000	10,914
493. Willoughby, Welland	446	4,030	101	.....	.....	200	.....
494. Wilmot, Waterloo	3,069	20,257	468	.....	.....	.....	.....
495. Winchester, Dundas	52,357	28,793	.....	.....	1,423	3,000	6,857
496. Windham, Norfolk	62	13,377	76	.....	.....	.....	.....
497. Wolfe Island, Frontenac	178	9,974	40	.....	.....	125	.....
498. Wolford, Grenville	1,176	6,351	44	.....	.....	.....	.....
499. Wollaston, Hastings	94	2,211	22	.....	.....	.....	.....
500. Woodhouse, Norfolk	1,097	9,550	18	.....	11	.....	.....
501. Woolwich, Waterloo	3,516	19,420	157	614	330	.....	.....
502. Yarmouth, Elgin	6,401	29,439	153	.....	5	15,000	1,400
503. Yonge and Escott Front, Leeds	592	12,435	175	.....	207	1,300	.....
504. Yonge and Escott Rear, Leeds	1,076	5,766	81	.....	314	.....	.....
505. York, York	314	91,912	724	5,710	1,984	447	.....
506. Zone, Kent	597	6,682	10	.....	20	1,500	.....
507. Zorra E., Oxford	4,978	26,950	456	.....	74	2,000	.....
508. Zorra, W., Oxford	12,146	15,082	.....	.....	539	1,618	.....

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
892	49,379	1,297	753	5,290	.....	28	6,724	9,535	.....	16,538	469
5	12,930	515	126	1,920	.....	31	.....	4,356	.....	1,382	470
467	16,809	869	585	2,705	.....	29	1,978	7,230	544	.....	471
802	13,170	612	743	776	.....	9	1,211	6,089	1,682	.....	472
341	13,170	745	325	1,446	.....	120	3,783	4,724	22	914	473
3	23,291	843	340	2,727	77	630	5,149	8,501	.....	.....	474
3	12,829	502	121	1,731	240	12	2,506	4,566	10	.....	475
535	11,656	523	190	846	.....	30	1,305	3,862	.....	.....	476
449	20,692	488	165	4,244	.....	142	4,029	6,059	201	.....	477
221	35,184	1,420	404	5,613	.....	30	5,068	16,014	.....	4,033	478
93	3,056	284	109	337	.....	12	.....	1,248	.....	186	479
75	10,785	528	132	1,071	.....	83	1,424	3,981	.....	.....	480
25	12,968	651	104	1,469	.....	87	1,571	5,340	789	.....	481
21	20,711	957	293	2,620	.....	48	3,656	11,440	.....	.....	482
8	11,568	831	264	1,527	5	60	1,575	5,652	343	.....	483
245	36,925	1,421	340	5,964	.....	23	7,266	7,593	93	.....	484
118	13,877	784	172	2,746	.....	169	2,292	5,013	.....	.....	485
2	15,492	813	210	3,167	.....	85	2,246	4,369	.....	.....	486
4	15,307	792	247	2,565	.....	43	3,707	5,397	.....	190	487
.....	2,614	356	51	759	25	24	.....	679	.....	.....	488
.....	5,406	388	101	577	.....	39	722	2,781	.....	.....	489
97	14,620	515	104	1,876	.....	91	3,757	3,212	.....	.....	490
130	13,455	511	105	1,912	.....	173	2,797	2,609	45	.....	491
*2,795	39,772	425	308	3,385	415	412	2,382	9,286	8,310	306	492
54	4,831	251	85	503	.....	.....	1,407	1,523	259	.....	493
40	23,834	1,250	780	2,345	.....	10	3,754	10,454	.....	.....	494
595	93,025	669	433	4,321	430	210	2,134	9,166	14,903	.....	495
29	13,544	898	119	794	49	16	2,925	6,014	500	.....	496
.....	10,317	432	241	1,206	.....	201	3,073	4,476	.....	.....	497
.....	7,571	455	231	645	.....	24	1,486	3,817	.....	.....	498
227	2,554	286	56	372	.....	10	131	1,296	.....	.....	499
28	10,704	581	127	1,242	.....	75	2,055	3,382	.....	.....	500
369	24,406	1,146	326	3,663	.....	7	3,353	9,219	.....	1,166	501
722	53,120	1,746	4,493	7,364	.....	102	7,111	9,786	.....	.....	502
5	14,714	561	344	3,756	.....	60	1,589	5,741	.....	929	503
396	7,633	304	83	314	.....	9	765	3,490	.....	853	504
1,185	102,276	6,808	4,251	27,357	250	540	10,363	24,948	.....	2,246	505
38	8,847	716	90	917	.....	176	844	1,870	530	.....	506
50	34,508	1,226	220	5,700	38	63	4,808	7,709	2,638	.....	507
12	29,397	620	194	4,251	.....	15	4,607	4,627	1,321	.....	508

* Including $2,475 from other municipalities as share of debt.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
469. Vaughan				857	41,022	8,357	433
470. Verulam	84		173	186	8,773	4,157	
471. Vespra	471		187	105	14,703	2,106	1,493
472. Wainfleet	1,315		211	92	12,740	430	4,196
473. Wallace			901	68	13,048	122	3,306
474. Walpole	300	2,000	141	437	21,145	2,146	3
475. Walsingham N	100	120	5	193	10,106	2,723	1,686
476. Walsingham S	2,396	800	827	131	10,910	746	22
477. Warwick	1,470	3,100	257	403	20,558	134	446
478. Waterloo	1,410		644	548	35,184		
479. Watt	500		47	18	2,741	315	936
480. Wawanosh E		1,000	30	350	8,599	2,186	208
481. Wawanosh W	467	1,300	82	396	12,256	712	1,931
482. Wellesley	119		162	250	19,545	1,166	661
483. Westmeath	402		84	802	11,545	23	
484. Westminster	320	5,000	223	363	28,606	8,319	2,993
485. Whitby E		2,100	40	82	13,398	479	352
586. Whitby	1,255	2,150	168	227	14,690	802	232
487. Whitchurch	320		16	223	13,500	1,807	1,072
488. Widdifield		250	10	346	2,500	114	3,923
489. Wilberforce and Algona N				151	4,759	647	2,418
490. Williams E				276	9,831	4,789	666
491. Williams W		2,251	63	135	10,601	2,854	639
492. Williamsburg	1,639	4,461	518	457	32,304	7,468	52
493. Willoughby	102	425	46	64	4,665	166	1,164
494. Wilmot	445		222	459	19,719	4,115	
495. Winchester	5,522	3,788	2,985	766	45,327	47,698	
496. Windham				159	11,474	2,070	
497. Wolfe Island		393	8	9	10,039	278	3,231
498 Wolford		400	18	144	7,220	351	1,666
499. Wollaston				19	2,170	384	1,572
500. Woodhouse			4	446	7,912	2,792	4
501. Woolwich	2,524		1,056	180	22,640	1,766	5
502. Yarmouth	420	20,000	561	566	52,149	971	2,780
563. Yonge and Escott Front		800	605	227	14,612	102	307
504. Yonge and Escott Rear			750	25	6,593	1,040	10
505. York	10,413		4,724	*10,102	102,002	274	33,554
506. Zone	1,656	500	292	218	7,809	1,038	4,204
507. Zorra E	2,287	2,000	659	297	27,645	6,863	245
508. Zorra W	1,600		604	218	18,057	11,340	1,519

* Including $3,879 paid to county re non-resident tax debentures.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1901.			Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
35,332	2,657	46,779	100	.....	.....	249	349	469
3,039	2,060	9,256	1,932	3,666	.....	100	5,698	470
.....	1,750	5,349	1,978	3,769	.....	900	6,647	471
26,000	8,049	38,675	2,938	3,230	.....	2,529	8,697	472
6,425	736	10,589	1,110	20,000	639	65	21,814	473
.....	2,400	4,549	.....	1,800	.....	.....	1,800	474
.....	1,437	5,846	826	.....	120	.....	946	475
.....	3,979	4,747	.....	13,888	.....	.....	13,888	476
.....	3,452	4,032	.....	2,751	826	55	3,632	477
36,401	7,519	43,920	908	13,612	3,837	.....	18,357	478
186	300	1,737	706	300	.....	69	1,075	479
.....	.....	2,394	1,424	.....	.....	.....	1,424	480
.....	3,786	6,429	1,571	2,786	.....	100	4,457	481
12,611	3,951	18,389	.....	3,951	.....	.....	3,951	482
.....	2,331	2,354	.....	2,233	.....	36	2,269	483
.....	750	12,062	7,292	750	.....	.....	8,042	484
3,200	1,700	5,731	.....	.....	.....	80	80	485
60	400	1,494	32	1,318	.....	561	1,911	486
14,233	290	17,402	.....	.....	1,500	448	1,948	487
.....	610	4,647	1,441	.....	250	161	1,852	488
.....	1,382	4,447	1,612	1,200	.....	262	3,074	489
.....	61	5,516	3,770	.....	.....	130	3,900	490
.....	352	3,845	2,816	.....	.....	45	2,861	491
1,448	2,821	11,789	.....	18,481	.....	.....	18,481	492
.....	1,225	2,555	886	602	125	32	1,645	493
.....	4,862	8,977	.....	3,482	.....	.....	3,482	494
.....	5,210	52,508	.....	73,115	.....	633	73,748	495
.....	2,450	4,520	.....	.....	.....	.....	.....	496
.....	2,306	5,815	3,187	.....	.....	312	3,499	497
.....	750	2,767	1,486	.....	.....	.....	1,486	498
.....	1,000	2,956	913	.....	.....	70	983	499
.....	.....	2,796	.....	.....	.....	.....	.....	500
9,166	955	11,892	.....	21,361	.....	.....	21,361	501
.....	5,726	9,477	326	4,223	4,000	860	9,409	502
7,904	2,150	10,463	.....	8,788	3,500	31	12,319	503
11,137	2,315	14,502	.....	15,000	.....	.....	15,000	504
32,906	82,022	148,756	21,331	76,978	7,697	10,243	116,209	505
.....	1,484	6,726	2,265	4,702	1,000	.....	7,967	506
.....	4,765	11,873	.....	13,609	.....	3,814	17,423	507
14,541	450	27,850	.....	9,645	9,525	.....	19,170	508

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Village Municipalities and Counties in which located.	Receipts, 1902.							
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$	$
1. Acton, Halton	440	7,546	397	2,151	2,344	89	4,251	2,204
2. Ailsa Craig, Middlesex	86	2,758	209	.....	6	.....	273	5,000
3. Alexandria, Glengarry	61	8,303	953	3,833	.....	116	37,050	8,500
4. Alvinston, Lambton	.....	3,922	500	.....	.....	2	15,845	.....
5. Arkona, Lambton	249	1,212	187	.....	.....	.....	.....	.....
6. Arthur, Wellington	234	5,427	591	.....	.....	.....	9,007	.....
7. Ashburnham, Peterborough	446	8,112	750	768	231	303	2,787	.....
8. Athens, Leeds	424	3,753	129	.....	.....	.....	1,000	.....
9. Ayr, Waterloo	.....	4,743	200	.....	.....	160	4,650	4,000
10. Bath, Lennox and Addington	144	1,988	92	.....	.....	60	150	.....
11. Bayfield, Huron	227	1,305	150	.....	.....	.....	.....	.....
12. Beamsville, Lincoln	938	4,400	366	393	.....	.....	1,934	.....
13. Beaverton, Ontario	955	2,982	193	.....	.....	260	550	.....
14. Beeton, Simcoe	348	3,706	248	2,098	.....	130	.....	7,000
15. Belle River, Essex	1	1,556	142	.....	.....	.....	360	.....
16. Blyth, Huron	88	4,697	413	.....	1,051	77	1,765	6,000
17. Bobcaygeon, Victoria	3,541	3,976	258	.....	.....	8	.....	.....
18. Bolton, Peel	23	2,627	202	.....	.....	.....	2,500	.....
19. Bradford, Simcoe	264	3,901	238	.....	2,757	.....	.....	.....
20. Bridgeburg, Welland	1,235	6,843	165	.....	38	668	10,800	32,000
21. Brighton, Northumberland	2,522	6,013	342	.....	.....	.....	2,399	.....
22. Brussels, Huron	2,334	7,899	562	.....	4,203	478	.....	.....
23. Burk's Falls, Parry Sound	2,278	3,929	144	.....	1,371	59	500	1,408
24. Burlington, Halton	466	5,454	419	.....	.....	106	2,000	.....
25. Caledonia, Haldimand	152	4,462	377	.....	.....	.....	2,000	.....
26. Campbellford, Northumberland	90	15,164	1,080	4,183	978	.....	8,100	.....
27. Cannington, Ontario	78	4,413	345	.....	.....	.....	2,030	.....
28. Cardinal, Grenville	648	4,691	528	.....	.....	.....	1,100	.....
29. Casselman, Russell	224	2,116	60	.....	.....	.....	.....	.....
30. Cayuga, Haldimand	136	3,696	301	.....	.....	.....	8,651	.....
31. Chesley, Bruce	3,421	9,752	360	.....	.....	73	5,513	12,443
32. Chesterville, Dundas	480	2,410	213	.....	.....	.....	2,220	538
33. Chippewa, Welland	1,675	1,757	341	.....	.....	29	.....	.....
34. Clifford, Wellington	636	1,983	89	.....	.....	24	.....	.....
35. Cobden, Renfrew	333	2,249	259	.....	.....	.....	1,870	1,200
36. Colborne, Northumberland	451	4,955	153	.....	.....	.....	1,000	.....
37. Creemore, Simcoe	354	2,587	135	.....	.....	.....	200	.....
38. Delhi, Norfolk	313	3,643	149	.....	.....	5	.....	.....
39. Drayton Wellington	5,396	4,187	324	.....	.....	142	2,975	8,685
40. Dundalk, Grey	.....	3,219	240	1,706	.....	.....	2,066	.....
41. Dutton, Elgin	326	5,404	262	.....	.....	.....	1,000	3,500
42. East Toronto, York	61	17,349	103	2,108	3,306	454	12,013	11,834
43. Eganville, Renfrew	1,755	4,959	424	.....	.....	.....	.....	.....
44. Elmira, Waterloo	723	4,412	186	.....	.....	20	1,000	2,500
45. Elora, Wellington	1,587	6,842	555	.....	2,000	39	.....	.....
46. Embro, Oxford	1,560	2,877	228	.....	.....	3	.....	1,431
47. Erin, Wellington	270	1,785	163	.....	.....	.....	575	.....
48. Exeter, Huron	3,979	9,881	485	261	.....	81	1,600	.....
49. Fenelon Falls, Victoria	699	4,350	455	.....	103	.....	.....	.....
50. Fergus, Wellington	859	7,697	897	.....	1,216	77	2,393	2,000

VILLAGE MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.										No.
		Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Schools and education.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	$	
459	19,881	669	2,333	297	23	2,313	500	37	306	2,450	2,902	1
83	8,415	183	490	130	26	5,496	.....	5	237	1,312	.....	2
*1,040	59,856	273	4,536	346	250	1,318	7,999	101	477	4,180	.....	3
242	20,511	348	849	257	26	4,838	81	118	263	3,478	.....	4
90	1,738	243	.....	110	28	285	110	102	132	508	.....	5
137	15,396	295	411	226	58	7,513	.....	9	442	2,296	.....	6
210	13,607	591	2,842	287	188	1,817	228	83	1,007	2,725	2,360	7
92	5,398	212	63	60	20	843	1,000	.....	224	1,490	700	8
152	13,905	150	490	166	42	3,065	.....	5	339	1,700	240	9
2	2,436	257	12	87	.....	299	.....	73	300	645	.....	10
.....	1,682	148	.....	94	6	398	.....	38	89	730	.....	11
149	8,180	479	442	126	15	96	.....	28	410	1,757	.....	12
120	5,060	202	240	106	42	532	.....	74	316	1,470	127	13
98	13,628	729	2,044	928	36	903	.....	23	870	852	.....	14
16	2,075	159	.....	46	.....	393	.....	55	89	728	.....	15
.....	14,091	331	664	164	109	556	.....	1	153	1,055	6,196	16
.....	7,783	115	269	138	339	474	.....	.....	.....	1,443	786	17
302	5,654	155	61	115	48	931	99	7	143	710	.....	18
51	7,211	456	318	188	28	1,043	.....	38	457	2,200	.....	19
211	51,960	306	.....	349	76	1,584	21,430	18	919	2,069	10,824	20
116	11,392	250	513	374	58	2,696	.....	128	573	1,300	....	21
7	15,483	411	613	264	120	196	.....	55	246	1,728	5,783	22
301	9,990	274	242	74	32	406	.....	116	.....	1,482	2,860	23
43	8,488	528	905	241	31	386	.....	278	380	1,803	.....	24
76	7,067	240	29	155	28	406	.....	2	291	2,317	.....	25
251	29,846	781	3,845	603	431	3,672	1,438	106	593	4,988	231	26
.....	6,866	282	407	217	34	610	1,223	11	441	1,500	.....	27
181	7,148	209	672	295	95	1,307	.....	9	256	1,945	.....	28
.....	2,400	130	.....	23	13	350	.....	.....	171	841	.....	29
474	13,258	311	199	212	6	4,759	.....	32	225	1,900	.....	30
265	31,827	702	792	737	8	5,126	402	27	631	2,400	422	31
65	5,926	118	116	203	.....	738	472	124	156	1,576	.....	32
.....	3,802	129	105	146	155	167	.....	7	212	850	.....	33
39	2,771	153	52	102	26	262	.....	10	280	828	24	34
37	5,948	161	8	190	50	884	2,630	70	148	748	.....	35
14	6,573	231	517	517	44	1,017	.....	16	392	2,205	.....	36
46	3,322	145	160	82	40	867	.....	6	244	1,078	.....	37
122	4,232	142	7	137	10	643	.....	10	300	1,113	.....	38
357	22,066	347	287	325	47	1,208	5,626	13	252	1,605	.....	39
85	7,316	265	1,589	153	120	395	472	74	184	1,075	....	40
552	11,044	260	438	114	50	839	1,149	9	588	1,933	.....	41
257	47,485	1,259	3,824	618	235	1,794	10,163	10	794	2,651	1,839	42
207	7,345	391	14	170	12	918	407	55	381	2,566	2,259	43
52	8,893	199	242	168	49	2,487	.....	7	359	1,181	.....	44
395	11,418	349	460	294	357	508	.....	9	534	2,879	.....	45
157	6,256	216	150	642	50	403	.....	.....	346	1,000	.....	46
5	2,798	114	229	97	25	684	.....	5	237	600	.....	47
138	16,425	616	1,566	505	43	2,912	.....	70	371	2,530	534	48
10	5,617	452	471	324	237	649	75	21	429	1,460	.....	49
530	15,669	537	955	334	345	2,402	.....	18	.....	5,558	1,301	50

* Including $815 premium on debentures.

Villages.	Disbursements, 1902—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
1. Acton	183	4,299	1,244	*1,792	19,348	533	559
2. Ailsa Craig	.....	.....	27	509	8,415	.....	54
3. Alexandria	969	36,101	2,376	831	59,757	99	1,453
4. Alvinston	166	9,885	134	68	20,511	.....	107
5. Arkona	.....	.....	.....	45	1,563	175	.....
6. Arthur	734	2,500	787	125	15,396	.....	794
7. Ashburnham	216	.....	948	315	13,607	.....	504
8. Athens	.....	.....	.....	416	5,028	370	253
9. Ayr	507	5,062	818	†1,151	13,735	170	379
10. Bath	.....	150	4	215	2,042	394	56
11. Bayfield	.....	.....	.....	2	1,505	177	.....
12. Beamsville	598	1,934	768	25	6,678	1,502	183
13. Beaverton	475	350	200	77	4,211	849	186
14. Beeton	813	2,200	1,978	294	11,670	1,958	70
15. Belle River	.....	300	14	121	1,905	170	355
16. Blyth	93	2,181	302	290	12,095	1,996	202
17. Bobcaygeon	.....	.....	150	35	3,749	4,034	320
18. Bolton	.....	2,406	45	816	5,536	118	.....
19. Bradford	400	.....	147	17	5,292	1,919	1,785
20. Bridgeburg	977	10,800	1,070	‡1,338	51,760	200	527
21. Brighton	407	2,399	262	317	9,277	2,115	.....
22. Brussels	849	.....	2,361	166	12,792	2,691	492
23. Burk's Falls	270	975	415	191	7,337	2,653	155
24. Burlington	294	2,600	113	73	7,632	856	146
25. Caledonia	1,000	1,000	319	116	5,903	1,164	349
26. Campbellford	2,515	7,970	2,227	445	29,845	1	606
27. Cannington	418	1,500	153	70	6,866	.....	928
28. Cardinal	188	1,100	161	189	6,426	722	200
29. Casselman	.....	164	169	340	2,201	199	623
30. Cayuga	563	4,200	267	216	12,890	368	332
31. Chesley	597	13,552	1,464	818	27,678	4,149	197
32. Chesterville	97	2,096	84	146	5,926	.....	1,158
33. Chippewa	134	.....	190	25	2,120	1,682	100
34. Clifford	.....	.....	.....	132	1,869	902	551
35. Cobden	.....	370	17	205	5,481	467	391
36. Colborne	.....	1,000	66	73	6,078	495	2
37. Creemore	.....	612	4	54	3,292	30	1,628
38. Delhi	.....	.....	.....	540	2,902	1,330	326
39. Drayton	245	8,066	342	298	18,661	3,405	293
40. Dundalk	476	1,858	277	378	7,316	.....	524
41. Dutton	532	1,500	443	‖2,939	10,794	250	871
42. East Toronto	4,448	15,930	3,827	93	47,485	.....	3,099
43. Eganville	112	.....	7	28	7,320	25	.....
44. Elmira	768	1,000	543	556	7,559	1,334	.....
45. Elora	1,459	.....	761	¶1,957	9,567	1,851	3,853
46. Embro	281	1,500	227	206	5,021	1,235	54
47. Erin	.....	575	13	85	2,664	134	19
48. Exeter	1,186	1,600	1,010	515	13,458	2,967	62
49. Fenelon Falls	.....	.....	.....	347	4,465	1,152	3,121
50. Fergus	1,150	1,700	373	316	14,989	680	4,344

* Including $1,653, Board of Health expenses. † Including $1,000 Bonus to Electric Light Co. ‡ Including $88 paid to other municipalities as share of debt. ‖ Including $2,500 Bonus to L. E. & D. R. Ry. ¶ Including $1,500 paid Mundell, balance of loan.

VILLAGE MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.				Liabilities on December 31, 1902.					
Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	
5,221	10,000	20,959	37,272	200	27,476	551	605	28,832	1
108	.....	1,455	1,617	.....	5,000	273	.....	5,273	2
.....	46,500	8,810	56,862	106	41,057	7,709	948	49,820	3
.....	1,390	4,611	6,108	.....	326	6,743	25	7,094	4
.....	.....	1,055	1,230	.....	.....	.....	.....	.....	5
.....	.....	9,958	10,752	845	13,795	6,507	138	21,285	6
3,848	10,230	6,325	20,907	.....	19,500	2,787	.....	22,287	7
700	.....	1,725	3,048	.....	.....	1,000	521	1,521	8
5,924	.....	5,475	11,948	.....	15,306	.....	.....	15,306	9
2,000	.....	1,718	4,168	550	.....	.....	.....	550	10
.....	.....	700	877	.....	.....	.....	.....	.....	11
.....	15,000	3,308	19,993	377	11,975	1,060	571	13,983	12
3,185	.....	8,441	12,661	.....	3,500	1,570	194	5,264	13
.....	36,000	7,465	45,493	.....	24,714	.....	28	24,742	14
.....	.....	800	1,325	.....	.....	271	10	281	15
7,310	600	16,085	26,193	1,108	27,932	.....	.....	29,040	16
2,862	580	5,712	13,508	1,861	3,000	.....	636	5,497	17
.....	.....	1,475	1,593	.....	.....	200	300	500	18
.....	.....	8,800	12,504	2,927	2,577	.....	470	5,974	19
10,824	21,430	5,012	37,993	2,250	32,748	.....	3,874	38,872	30
.....	140	10,493	12,748	2,600	4,593	.....	.....	7,193	21
13,009	.....	6,925	23,117	.....	53,482	.....	.....	53,482	22
18,671	.....	2,792	24,271	2,000	25,465	.....	1,068	28,533	23
2,000	1,350	7,873	12,225	.....	308	.....	.....	308	24
.....	.....	6,200	7,713	.....	4,500	1,000	.....	5,500	25
231	34,400	8,390	43,628	888	38,205	130	438	39,661	26
.....	.....	8,715	9,643	.....	1,895	530	.....	2,425	27
.....	.....	4,002	4,924	256	2,478	.....	50	2,784	28
418	.....	589	1,829	.....	2,000	1,278	125	3,403	29
.....	.....	7,115	7,815	.....	1,200	4,651	.....	5,851	30
873	.....	30,630	35,849	.....	28,406	15,181	300	43,887	31
.....	.....	1,075	2,233	.....	659	874	375	1,908	32
500	.....	8,250	10,532	950	3,866	500	200	5,516	33
822	.....	950	3,225	.....	.....	.....	.....	.....	34
.....	.....	50	908	110	1,200	1,500	12	2,822	35
.....	.....	4,340	4,837	.....	.....	.....	.....	.....	36
.....	.....	100	1,758	558	.....	.....	88	646	37
.....	.....	100	1,756	1,055	.....	.....	1,575	2,630	38
.....	.....	11,229	14,927	341	13,966	.....	749	15,059	39
.....	6,500	950	7,974	123	4,775	716	1,544	7,158	40
.....	.....	5,800	6,921	.....	8,472	.....	.....	8,472	41
17,361	48,065	27,637	96,162	1,741	75,650	8,602	748	86,741	42
2,259	.....	4,148	6,432	531	46	.....	.....	577	43
.....	.....	800	2,134	.....	13,332	.....	355	13,687	44
4,500	.....	13,232	23,436	2,385	16,496	.....	200	19,081	45
.....	.....	7,000	8,289	1,549	3,483	.....	.....	5,032	46
.....	.....	533	686	.....	.....	.....	62	62	47
2,495	2,900	12,590	21,014	3,126	19,181	.....	.....	22,307	48
.....	.....	5,330	9,606	2,424	.....	.....	.....	2,424	49
2,037	.....	18,520	25,581	2,117	7,742	775	787	11,421	50

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Village Municipalities and Counties in which located.	Receipts, 1902.							
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on Debentures.
	$	$	$	$	$	$	$	$
51. Fort Erie, Welland	1,116	4,993	403					
52. Garden Island, Frontenac	365	1,658						
53. Georgetown, Halton	5,888	7,929	408	2,280			3,644	
54. Glencoe, Middlesex	122	4,362	745				4,500	
55. Grand Valley, Dufferin	124	3,564	282				17,485	5,524
56. Grimsby, Lincoln	90	4,523	165				1,500	4,100
57. Hagersville, Haldimand	167	4,819	98				1,400	
58. Hanover, Grey	11,105	6,822	206	297		138	1,000	10,000
59. Hastings, Northumberland	165	3,412	569				500	
60. Havelock, Peterborough	263	3,389	537				1,091	
61. Hensall, Huron	491	2,689	145		5		3,429	
62. Hintonburg, Carleton	465	14,065	169	3,657		48	4,576	
63. Holland Landing, York	77	812	55				416	
64. Iroquois, Dundas		8,512	507	1,386			29,204	6,000
65. Kemptville, Grenville	2,822	7,154	566		824	37	2,000	1,556
66. Lakefield, Peterborough	170	5,928	414		1,802	178	2,400	2,998
67. Lanark, Lanark	99	4,262	410				800	
68. Lancaster, Glengarry	209	1,901	280				600	
69. L'Orignal, Prescott	371	2,171	90					
70. Lucan, Middlesex	413	3,769	315		1,047	197	6,389	
71. Lucknow, Bruce	2,461	5,022	540		7,589	452		7,100
72. Madoc, Hastings		6,884	510				1,264	
73. Markdale, Grey	636	3,969	245				1,000	1,000
74. Markham, York	1,473	6,960	228	1,066		8	200	5,000
75. Marmora, Hastings	284	1,625	279					
76. Maxville, Glengarry	217	2,307	6					
77. Merrickville, Grenville	1,010	5,971	180				3,230	
78. Merriton, Lincoln	959	14,964	692	3,814	129	25	500	
79. Millbrook, Durham	801	3,478	629				1,850	
80. Milverton, Perth	748	2,704	256				1,894	
81. Morrisburg, Dundas	275	13,142	431	4,749		12	1,112	8,170
82. Newboro', Leeds	875	1,815	108			180		
83. Newburg, Lennox & Addington	384	3,067	23				200	
84. Newbury, Middlesex,	606	984	116				180	
85. Newcastle, Durham	1,281	3,798	102				200	
86. New Hamburg, Waterloo		5,704	331				1,152	5,000
87. Niagara Falls South, Welland	238	7,666	229	1,528		28	5,500	
88. Norwich, Oxford	2,421	9,209	313		1,030		5,000	1,700
89. Norwood, Peterborough	194	5,505	332			178	1,000	
90. Oil Springs, Lambton		5,109	369				1,728	
91. Omemee, Victoria	125	2,449	200				1,215	
92. Ottawa East, Carleton	1,129	4,243	151			39		
93. Paisley, Bruce	1,365	7,156	975				4,877	14,000
94. Point Edward, Lambton	1,099	4,986	274				1,700	10,000
95. Port Carling, Muskoka	379	1,911	84				321	1,600
96. Port Colborne, Welland	1,547	5,462	296	1,434		447		12,272
97. Port Dalhousie, Lincoln	2,021	5,510	874				3,500	6,500
98. Port Dover, Norfolk	470	5,711	150				1,200	
99. Port Elgin, Bruce	60	6,561	850		3,670	329	3,269	
100. Port Perry, Ontario	530	9,765	653			117	7,000	

VILLAGE MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Miscellaneous.	Total receipts.	Disbursements, 1902.										No.
		Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal Government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Schools and education.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	$	
.....	6,512	351	.....	481	18	2,208	55	10	.....	1,450	.....	51
.....	2,023	25	.....	12	.....	65	.....	.....	325	769	.....	52
67	20,216	213	956	393	150	807	.....	104	362	3,051	8,000	53
148	9,877	494	823	206	207	1,085	313	24	400	1,895	.....	54
649	27,628	479	159	293	39	3,215	166	5	144	1,705	.....	55
252	10,630	207	337	151	10	493	.....	18	475	2,186	1,605	56
18	6,502	214	.....	136	50	1,129	.....	7	252	2,149	.....	57
185	29,753	281	1,332	308	18	486	10,272	.....	267	1,684	.....	58
.....	4,646	179	486	170	109	620	.....	23	234	1,490	.....	59
184	5,464	173	.....	154	91	846	185	22	262	1,446	.....	60
64	6,823	148	336	99	20	3,990	.....	.....	165	1,050	.....	61
145	23,125	756	3,093	241	438	2,619	3,821	.....	.....	3,590	223	62
40	1,400	91	.....	61	3	257	....	4	138	392	.....	63
15	45,624	185	823	890	7	6,101	12,103	116	145	1,841	300	64
117	15,076	315	805	397	135	3,205	1,700	147	415	3,500	160	65
171	14,061	383	504	337	209	643	.....	32	546	4,658	2,647	66
14	5,585	347	166	91	146	341	.....	79	426	1,900	.....	67
10	3,000	125	105	78	13	1,120	.....	15	113	867	.....	68
.....	2,632	213	5	39	6	510	.....	3	239	1,168	.....	69
16	12,146	178	281	95	24	4,434	.....	1	182	1,732	469	70
598	23,762	383	1,367	361	6	2,040	.....	84	377	1,732	8,633	71
90	8,748	280	277	220	147	1,023	.....	182	759	2,541	.....	72
380	7,230	211	333	279	73	520	.....	56	214	2,016	.....	73
105	15,040	141	2,716	560	22	912	.....	3	428	1,372	5,000	74
90	2,278	157	71	132	102	523	.....	72	407	500	.....	75
1	2,531	63	9	37	6	452	50	17	115	1,004	.....	76
83	10,474	503	614	106	9	1,334	.....	20	641	2,056	.....	77
62	21,145	1,200	3,439	545	57	2,351	744	29	1,049	3,370	566	78
203	6,961	329	763	274	14	965	41	6	250	1,112	.....	79
111	5,713	148	144	123	17	1,652	72	7	179	1,073	.....	80
136	28,027	743	3,628	386	34	2,635	7,369	111	614	5,238	.....	81
30	3,008	83	.....	41	8	327	.....	15	119	817	320	82
.....	3,674	187	28	80	10	412	.....	65	319	1,200	.....	83
5	1,891	139	.....	67	10	447	.....	2	149	448	.....	84
100	5,481	247	95	109	73	790	50	2	244	2,000	.....	85
349	12,536	359	667	865	56	631	418	7	423	2,103	.....	86
2	15,191	429	2,294	356	8	1,193	620	17	436	2,430	.....	87
258	19,931	349	1,369	288	372	2,843	.....	19	553	1,804	1,075	88
368	7,577	198	894	137	32	878	.....	9	536	1,907	822	89
138	7,344	382	80	352	38	956	70	40	279	1,587	.....	90
.....	3,989	165	205	369	15	437	.....	10	199	1,060	.....	91
.....	5,562	261	.....	80	13	1,130	.....	.....	546	2,357	.....	92
463	28,836	317	946	660	396	2,954	.....	13	418	1,741	14,000	93
3	18,062	381	3	477	55	1,786	.....	4	172	1,950	.....	94
93	4,388	99	.....	159	19	81	.....	10	.....	1,915	.....	95
35	21,493	693	603	221	35	13,707	382	31	477	1,500	.....	96
.....	18,405	267	630	139	460	6,325	.....	50	438	1,731	.....	97
25	7,556	391	149	318	25	1,846	.....	41	450	912	.....	98
67	14,806	140	638	259	406	3,296	4	7	458	2,750	5,309	99
.....	18,065	630	1,037	158	117	539	539	42	640	3,285	.....	100

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Villages.	Disbursements, 1902—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
51. Fort Errie	469	.....	436	93	5,571	941	799
52. Garden Island	.....	.....	.....	107	1,303	720	.....
53. Georgetown	1,619	1,000	3,036	525	20,216	.....	1,388
54. Glencoe	950	2,500	562	318	9,777	100	1,797
55. Grand Valley	.....	19,485	162	810	26,662	966	13
56. Grimsby	671	900	303	*3,202	10,558	72	106
57. Hagersville	310	1,600	222	157	6,226	276	106
58. Hanover	446	1,000	1,016	†10,213	27,323	2,430	620
59. Hastings	.....	700	120	205	4,336	310	82
60. Havelock	117	1,500	195	336	5,327	137	380
61. Hensall	.....	.....	.....	239	6,047	776	.....
62. Hintonburg	2,188	.....	4,473	‡1,538	22,980	145	9,084
63. Holland Landing	.....	400	12	42	1,400	.....	410
64. Iroquois	1,396	18,024	1,899	433	44,263	1,361	530
65. Kemptville	1,373	2,000	550	328	15,030	46	2,484
66. Lakefield	.....	2,400	958	200	13,517	544	4
67. Lanark	299	800	158	132	4,885	700	.....
68. Lancaster	.....	.....	.....	85	2,521	479	144
69. L'Orignal	.....	.....	.....	222	2,405	227	1,038
70. Lucan	145	3,700	733	58	12,032	114	362
71. Lucknow	239	4,497	1,522	303	21,544	2,218	2,066
72. Madoc	964	1,465	763	127	8,748	.....	5,283
73. Markdale	817	1,000	637	477	6,633	597	129
74. Markham	1,236	200	821	51	13,462	1,578	542
75. Marmora	.....	.....	6	301	2,271	7	1,656
76. Maxville	.....	.....	.....	1	1,754	777	207
77. Merrickville	1,300	3,230	421	187	10,421	53	.....
78. Merriton	2,608	500	2,819	205	19,482	1,663	539
79. Millbrook	291	1,850	198	213	6,306	655	330
80. Milverton	246	1,764	215	73	5,713	.....	9
81. Morrisburg	2,508	1,000	2,505	1,256	28,027	.....	42
82. Newboro'	152	.....	257	6	2,145	863	.....
83. Newburg	500	700	40	43	3,584	90	3,412
84. Newbury	300	.....	18	95	1,675	216	850
85. Newcastle	193	200	68	42	4,113	1,368	.....
86. New Hamburg	985	530	392	¶5,100	12,536	.....	5,468
87. Niagara Falls	1,077	5,000	870	349	15,079	112	1,372
88. Norwich	683	4,980	962	§1,649	16,946	2,985	1,461
89. Norwood	148	1,000	558	145	7,264	313	50
90. Oil Springs	1,938	757	659	206	7,344	.....	4,964
91. Omemee	34	1,215	54	75	3,838	151	.....
92. Ottawa East	204	.....	142	226	4,939	623	2,585
93. Paisley	1,071	2,500	637	555	26,208	2,628	992
94. Point Edward	391	700	266	**10,220	16,405	1,657	841
95. Port Carling	48	321	88	951	3,691	697	200
96. Port Colborne	1,000	.....	1,354	95	20,098	1,395	16
97. Port Dalhousie	641	3,500	557	510	15,248	3,157	67
98. Port Dover	768	1,200	269	111	6,480	1,076	1,072
99. Port Elgin	565	.....	680	294	14,806	.....	2,112
100. Port Perry	1,593	6,624	1,560	388	17,150	915	3,221

* Including $2,500 bonus to manufacturers. † Including $10,000 bonus to Knechtel Furniture Co. ‡ Including $1,085, Board of Health expenses. § Including $1,150 paid to other municipalities as share of debt. ¶ Including $5,000 bonus to New Hamburg Manufacturing Co. ‖ Including $514, Board of Health expenses re smallpox outbreak, and $1,085 adjustment of value of debentures in sinking Fund. ** Including $10,000 bonus to G. A. Crosby.

VILLAGE MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.				Liabilities on December 31, 1902.					No.
Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
$	$	$	$	$	$	$	$	$	
.....	.....	9,985	11,725	1,474	6,196	1,700	13	9,383	51
.....	.....	.....	720	.....	.....	.....	.....	.....	52
10,000	40,000	12,244	63,632	.....	57,081	2,644	.....	59,725	53
.....	.....	7,962	9,859	572	10,287	2,020	.....	12,879	54
.....	.....	994	1,973	.....	5,524	.....	2,793	8,317	55
1,605	.....	5,100	6,883	438	6,612	600	.....	7,650	56
.....	.....	1,307	1,689	100	3,112	.....	50	3,262	57
.....	26,000	228	29,278	.....	34,554	.....	825	35,379	58
.....	.....	7,800	8,192	.....	.....	1,600	.....	1,600	59
.....	.....	4,611	5,128	.....	3,166	505	1,218	4,889	60
.....	.....	8,650	9,426	.....	.....	8,045	256	8,301	61
1,854	98,047	11,385	120,515	5,051	100,586	6,123	2,447	114,207	62
.....	.....	522	932	139	.....	16	33	188	63
300	37,400	14,068	53,659	2,699	33,965	19,252	2,766	58,682	64
.....	.....	15,350	17,880	416	16,231	.....	145	16,792	65
6,139	250	10,300	17,237	608	23,998	.....	50	24,656	66
.....	.....	6,700	7,400	.....	2,582	.....	.....	2,582	67
.....	.....	660	1,283	.....	.....	612	7	619	68
.....	.....	.....	1,265	725	.....	.....	68	793	69
4,809	.....	3,700	8,985	176	13,168	2,689	272	16,305	70
16,152	10,000	5,800	36,236	.....	26,361	4,076	.....	30,437	71
.....	.....	6,250	11,533	759	15,785	1,264	.....	17,808	72
.....	.....	11,394	12,120	369	13,387	.....	.....	13,756	73
5,000	14,100	3,784	25,004	1,560	19,761	.....	892	22,213	74
.....	.....	91	1,754	1,271	.....	.....	1,674	2,945	75
.....	.....	60	1,044	310	.....	.....	212	522	76
.....	.....	5,000	5,053	.....	2,200	.....	.....	2,200	77
566	73,807	12,823	89,398	.....	53,566	.....	1,485	55,051	78
.....	.....	7,648	8,633	310	2,877	.....	327	3,514	79
.....	200	.....	209	.....	4,664	139	.....	4,803	80
.....	60,000	2,327	62,369	.....	54,768	112	134	55,014	81
3,392	.....	1,210	5,465	266	4,893	.....	.....	5,159	82
.....	.....	100	3,602	1,894	500	.....	410	2,804	83
.....	.....	2,023	3,089	597	.....	183	.....	780	84
.....	.....	3,830	5,198	.....	1,122	.....	.....	1,122	85
2,300	.....	10,459	18,227	1,900	10,077	1,152	3,193	16,322	86
.....	11,000	2,236	14,720	.....	14,753	1,500	1,571	17,824	87
5,298	.....	8,238	17,982	1,204	22,557	4,178	.....	27,939	88
5,895	.....	4,669	10,927	.....	9,551	.....	53	9,604	89
.....	.....	4,200	9,164	216	9,984	1,728	.....	11,928	90
.....	.....	750	901	.....	253	.....	.....	253	91
500	.....	3,668	7,376	600	3,698	.....	48	4,346	92
14,000	.....	20,600	38,220	.....	13,530	2,377	240	16,147	93
.....	.....	2,500	4,998	1,528	9,609	1,000	.....	12,137	94
.....	.....	369	1,266	433	1,552	.....	427	2,412	95
.....	22,767	16,740	40,918	.....	31,483	.....	.....	31,483	96
6,500	.....	6,900	16,624	1,734	17,348	.....	.....	19,082	97
.....	.....	4,500	6,648	1,009	4,647	.....	.....	5,656	98
8,479	.....	13,118	23,709	250	20,889	3,269	64	24,472	99
.....	.....	14,050	18,186	.....	30,313	5,700	204	36,217	100

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Receipts, 1902.

Village Municipalities and Counties in which located.	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$	$
101. Port Rowan, Norfolk	8	3,124	74				2,044	
102. Port Stanley, Elgin	226	2,343	279				2,000	
103. Portsmouth, Frontenac	219	1,916	80				213	
104. Richmond, Carleton	95	1,256	169			32		
105. Richmond Hill, York	277	2,368	402		10	2	400	
106. Rockland, Russell	501	4,762	163				1,000	
107. Shelburne, Dufferin	426	7,679	678				3,050	
108. Southampton, Bruce	2,111	6,891	313			124	1,000	23,925
109. Springfield, Elgin	2	1,589	92			3	700	1,200
110. Stirling, Hastings	701	3,593	131				1,100	
111. Stouffville, York	745	5,302	174	377				5,000
112. Streetsville, Peel	962	2,242	167					
113. Sturgeon Point, Victoria	426	405				6	300	
114. Sundridge, Parry Sound	342	1,678	82				174	
115. Sutton, York	349	1,731	105				150	
116. Tara, Bruce	275	3,426	609		3,975		650	
117. Teeswater, Bruce	1,315	4,644	418		415	93		
118. Thamesville, Kent		5,937	255				2,800	
119. Thedford, Lambton	208	1,899	84				3,399	
120. Tilbury, Kent	46	6,878	194	917	759	139	9,654	
121. Tiverton, Bruce	316	1,719	139				325	
122. Tottenham, Simcoe	396	3,137	182				2,000	6,000
123. Tweed, Hastings	1,253	4,195	362					
124. Vienna, Elgin	415	1,634	95			27		
125. Wardsville, Middlesex	95	1,251	122					
126. Waterdown, Wentworth	80	1,814	157				300	
127. Waterford, Norfolk	194	6,915	194			16		2,000
128. Watford, Lambton	30	7,286	583		1,200		4,643	11,680
129. Wellington, Prince Edward	303	2,278	170				900	
130. Weston, York	129	7,574	201	910		6		
131. Winchester, Dundas	163	5,640	357		2,319		1,340	2,500
132. Woodbridge, York	26	2,011	148			141	410	
133. Woodville, Victoria	78	1,617	123				100	
134. Wroxeter, Huron	55	1,395	102				400	
135. Wyoming, Lambton		3,273	315				1,700	1,390
Towns.								
1. Alliston, Simcoe	3,437	7,872	479	166	101	285		
2. Almonte, Lanark	3,659	19,979	1,742	6,861		31	6,806	6,400
3. Amherstburg, Essex	83	14,113	592	3,369			17,106	
4. Arnprior, Renfrew	3,022	21,482	2,310	1,188		161	16,056	12,500
5. Aurora, York	195	10,947	239	713				
6. Aylmer, Elgin	924	20,568	898	6,044		2,685	10,572	66,600
7. Barrie, Simcoe	1	42,720	2,494	17,878	2,286	1,198	1,498	
8. Berlin, Waterloo		71,192	4,105	19,807		723	22,501	45,422
9. Blenheim, Kent	937	9,859	1,226	3,024			23,280	
10. Bothwell, Kent	2,256	4,848	920	1,245			3,200	1,356
11. Bowmanville, Durham	6,153	24,292	1,741	259		110	36,850	5,700

VILLAGE MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.—*Continued.*

Miscellaneous.	Total receipts.	Disbursements, 1902.										No.
		Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Schools and education.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	$	
65	5,315	116	350	95	10	379	.....	8	255	1,227	.....	101
.....	4,848	295	123	160	24	1,155	.....	5	.....	677	.....	102
.....	2,428	268	.....	31	80	306	.....	20	575	1,143	.....	103
82	1,634	161	.....	64	12	252	.....	58	150	630	12	104
175	3,634	145	105	377	125	435	.....	6	310	1,033	.....	105
.....	6,426	208	664	62	154	723	.....	2	304	3,347	.....	106
413	12,246	432	687	359	181	415	857	8	375	2,359	.....	107
160	34,524	339	751	490	88	3,768	17,922	10	882	2,254	.....	108
296	3,882	88	57	218	3	606	1,227	24	324	460	.....	109
182	5,707	200	749	155	.....	807	.....	197	558	1,891	400	110
55	11,653	232	249	150	19	4,441	35	4	546	2,089	.....	111
.....	3,371	305	145	83	46	374	.....	.....	151	1,067	.....	112
.....	1,137	53	.....	63	25	220	455	.....	25	38	.....	113
103	2,379	142	10	92	.....	257	439	5	.....	630	174	114
165	2,500	119	89	110	6	502	.....	20	218	798	.....	115
216	9,151	200	.....	364	34	411	579	12	248	1,341	.....	116
1	6,886	282	374	228	4	565	.....	30	362	1,610	583	117
115	9,107	328	584	344	139	835	.....	40	273	1,156	.....	118
2	5,592	131	98	87	20	3,130	.....	12	150	772	.....	119
.....	18,587	351	2,346	201	14	677	.138	10	246	1,406	224	120
.....	2,499	123	.....	149	12	95	.....	5	138	750	.....	121
150	11,865	316	195	392	25	1,237	3,789	4	244	505	.....	122
174	5,984	190	550	192	91	420	.....	56	1,295	1,509	.....	123
.....	2,171	104	.....	85	7	352	.....	7	305	711	109	124
28	1,496	89	8	23	3	53	.....	8	112	715	.....	125
64	2,415	130	65	106	21	653	34	13	195	595	.....	126
606	9,925	328	17	115	10	1,773	3,269	60	450	600	.....	127
276	25,698	514	601	308	7	4,078	19	13	691	3,000	900	128
2	3,653	199	.....	165	19	260	.....	36	179	703	15	129
217	9,037	526	2,032	367	106	560	98	29	537	2,027	.....	130
384	12,703	164	485	447	29	1,480	1,901	12	214	1,570	.....	131
184	2,920	178	65	122	31	640	.....	6	216	720	.....	132
1	1,919	115	25	114	7	133	158	65	201	450	.....	133
342	2,294	188	271	47	.....	291	.....	13	88	533	.....	134
140	6,818	279	171	138	.....	1,493	.....	26	203	1,561	.....	135
441	12,781	600	706	352	233	502	.....	33	570	2,032	1,386	1
77	45,555	781	1,829	1,364	640	7,714	4,396	68	1,884	7,286	649	2
270	35,533	668	3,473	1,214	365	1,527	1,191	426	450	2,395	.....	3
473	57,192	1,198	3,068	1,313	590	1,172	18,529	29	1,231	6,956	599	4
163	12,257	380	1,622	1,378	34	460	215	22	811	2,975	.....	5
21	108,312	919	9,879	850	294	3,638	23,455	41	1,404	5,121	.....	6
218	68,293	1,355	17,193	1,339	1,278	4,555	1,030	895	2,579	12,131	.....	7
15,606	179,356	5,472	22,876	2,371	961	30,703	20,586	1,177	3,793	24,268	71	8
195	38,521	589	4,476	685	508	1,680	267	38	.....	3,071	.....	9
98	13,923	668	961	411	430	1,499	999	136	222	1,360	.....	10
663	75,768	1,058	2,891	1,600	1,235	2,823	1,926	963	1,181	6,950	3,959	11

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Villages.	Disbursements, 1902.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
101. Port Rowan	155	2,000	67	653	5,315	.....	222
102. Port Stanley	.....	2,100	104	30	4,673	175	1,451
103. Portsmouth	.....	.....	1	4	2,428	.....	1,897
104. Richmond	56	.....	169	33	1,597	37	1,358
105. Richmond Hill	59	400	132	159	3,286	348	6
106. Rockland	.....	.....	24	638	6,126	300	2,753
107. Shelburne	844	3,874	1,277	577	12,245	1	855
108. Southampton	672	1,000	1,239	474	29,889	4,635	972
109. Springfield	.....	665	26	124	3,822	60	192
110. Stirling	120	200	36	8	5,321	386	1,501
111. Stouffville	690	.....	951	413	9,819	1,834	107
112. Streetsville	.....	.....	.....	178	2,349	1,022	627
113. Sturgeon Point	.....	.....	.....	88	967	170	11
114. Sundridge	.....	.....	340	168	2,257	122	1,195
115. Sutton	.....	150	4	41	2,057	443	65
116. Tara	2,368	1,150	449	362	7,518	1,633	.....
117. Teeswater	153	.....	683	71	4,945	1,941	13
118. Thamesville	792	2,919	218	239	7,867	1,240	484
119. Thedford	.....	1,050	42	61	5,553	39	121
120. Tilbury	2,149	9,280	1,362	143	18,547	40	1,807
121. Tiverton	.....	325	75	108	1,780	719	892
122. Tottenham	100	1,408	172	68	8,455	3,410	2,640
123. Tweed	444	.....	518	10	5,275	709	2,668
124. Vienna	.....	.....	150	28	1,858	313	1,069
125. Wardsville	.....	240	31	43	1,325	171	478
126. Waterdown	.....	500	6	58	2,376	39	716
127. Waterford	1,617	.....	432	179	8,850	1,075	.....
128. Watford	1,504	11,814	1,184	376	25,009	689	21
129. Wellington	200	1,650	136	62	3,624	29	354
130. Weston	1,179	.....	1,043	161	8,665	372	731
131. Winchester	1,065	1,540	641	2,847	12,395	308	93
132. Woodbridge	149	410	317	10	2,864	56	372
133. Woodville	.....	100	5	108	1,481	438	96
134. Wroxeter	.....	151	11	194	1,787	507	.....
135. Wyoming	300	1,916	73	65	6,225	593	235
Towns.							
1. Alliston	760	.....	2,279	67	9,520	3,261	1,292
2. Almonte	3,816	6,806	3,469	1,638	42,340	3,215	209
3. Amherstburg	3,162	15,546	4,560	556	35,533	.....	6,493
4. Arnprior	2,573	12,000	5,036	1,577	55,871	1,321	8,391
5. Aurora	1,431	.....	1,816	883	12,027	230	725
6. Aylmer	6,460	43,903	4,433	1,289	101,686	6,626	1,195
7. Barrie	9,886	2,398	9,672	1,483	65,794	2,499	5,055
8. Berlin	12,629	35,096	14,692	4,661	179,356	.....	2,387
9. Blenheim	1,789	23,115	2,007	235	38,460	61	2,740
10. Bothwell	466	3,900	261	238	11,497	2,426	1,020
11. Bowmanville	3,238	38,350	5,804	1,151	75,129	639	2,198

VILLAGE MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

December 31, 1902.				Liabilities on December 31, 1902.					No.
Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
$	$	$	$	$	$	$	$	$	
.....	.....	11	233	.....	.....	44	2,282	2,326	101
.....	40	1,550	3,216	391	.....	800	89	1,280	102
.....	.....	3,109	5,006	852	.....	213	241	1,306	103
1,081	.....	2,328	4,804	1,831	3,204	.....	.....	5,035	104
21	.....	4,180	4,555	.....	2,731	.....	.....	2,731	105
.....	.....	1,688	4,741	1,245	.....	1,049	900	3,194	106
.....	18,000	15,368	34,224	1,318	25,906	38	189	27,451	107
10,000	20,000	7,600	43,207	.....	43,949	.....	.....	43,949	108
.....	.....	3,421	3,673	.....	1,200	534	.....	1,734	109
400	175	2,950	5,412	827	3,480	1,119	.....	5,426	110
.....	25,000	3,240	30,981	.....	27,949	.....	313	28,262	111
.....	.....	1,695	3,344	835	.....	.....	15	850	112
.....	.....	550	731	.....	.....	300	.....	300	113
6,108	.....	1,470	8,895	760	5,100	2,977	108	8,945	114
.....	.....	4,042	4,550	.....	.....	.....	.....	.....	115
3,000	.....	200	4,833	.....	8,910	.....	.....	8,910	116
5,026	7,000	7,241	21,221	.....	14,652	.....	30	14,682	117
.....	1,000	10,800	13,524	1,400	2,535	.....	700	4,635	118
.....	.....	70	230	.....	.....	2,599	.....	2,599	119
3,532	16,969	7,367	29,715	246	24,767	805	2,052	27,870	120
.....	.....	2,000	3,611	.....	1,500	.....	.....	1,500	121
.....	7,000	3,839	16,589	745	8,865	1,000	*3,972	14,582	122
5,000	.....	4,950	13,327	1,040	12,125	.....	268	13,433	123
698	.....	1,500	3,580	469	3,000	.....	12	3,481	124
.....	.....	1,254	1,903	252	.....	586	51	889	125
.....	.....	1,140	1,895	.....	.....	.....	.....	.....	126
.....	.....	4,000	5,075	1,360	7,972	.....	.....	9,332	127
200	.....	5,542	6,452	.....	22,754	.....	.....	22,754	128
57	275	780	1,495	.....	1,200	500	.....	1,700	129
.....	6,400	6,357	13,860	708	15,042	.....	26	15,776	130
.....	.....	9,305	9,706	.....	11,699	500	283	12,482	131
3,554	.....	3,012	6,994	.....	5,994	854	.....	6,848	132
.....	30	926	1,490	302	.....	.....	109	411	133
.....	.....	5,737	6,244	.....	.....	400	.....	400	134
.....	.....	1,650	2,478	.....	1,277	.....	.....	1,277	135
10,986	19,341	10,642	45,522	2,561	50,683	.....	.....	53,244	1
1,280	27,750	60,500	92,954	.....	80,688	.....	312	81,000	2
.....	43,500	35,168	85,161	5,184	84,809	4,351	1,196	95,540	3
35,289	92,000	32,117	169,118	4,992	130,307	4,556	260	140,115	4
200	16,800	10,000	27,955	1,000	19,129	11,590	.....	31,719	5
.....	65,000	18,410	91,231	.....	86,951	2,200	500	89,651	6
30,997	146,605	54,642	239,798	8,797	234,393	9,620	4,312	257,122	7
71	140,504	252,172	395,134	.....	348,383	22,501	1,513	372,397	8
.....	9,500	31,035	43,336	648	29,873	4,465	196	35,182	9
.....	6,400	9,564	19,410	.....	8,860	1,800	.....	10,660	10
†13,567	.....	58,618	75,022	.....	102,941	15,000	.....	117,941	11

*Including $3,847 due on electric light plant construction.
†Including $7,608 for loan to foundry, not previously reported as an investment.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Town Municipalities and Counties in which located.	Receipts, 1902.						
	Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and Investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$	$	$	$
12. Bracebridge, Muskoka	848	13,650	922	6,036	586	40	3,000
13. Brampton, Peel	659	21,749	878	3,693	39	.....	6,000
14. Brockville, Leeds	166	79,678	8,220	*58,307	1,175	6,323	227,461
15. Carleton Place, Lanark	8,050	20,841	3,436	.....	.....	114	4,000
16. Clinton, Huron	10,326	15,052	1,340	.....	39	546	8,599
17. Cobourg, Northumberland	2,141	37,419	6.854	.....	.....	890	12,000
18. Collingwood, Simcoe	.....	41,852	4,387	12,794	535	233	200
19. Copper Cliff, Nipissing	.....	7,768	969	.....	.....	.....	5,000
20. Cornwall, Stormont	.....	45,698	4,498	8,855	141	845	22,172
21. Deseronto, Hastings	.....	22,593	1,202	1,382	.....	40	600
22. Dresden, Kent	1,751	13,264	956	3,070	.....	.....	14,000
23. Dundas, Wentworth	1,063	21,675	1,109	1,536	491	1,050	3,683
24. Dunnville, Haldimand	.....	13,729	1,229	1,483	800	192	8,396
25. Durham, Grey	5,163	6,415	657	.....	.....	1	227
26. Essex, Essex	105	12,783	643	1,566	.....	.....	9,851
27. Forest, Lambton	887	9,595	519	.....	300	57	4,300
28. Fort William, Thunder Bay	147	46,063	4,386	†25,496	3,994	1,567	56,500
29. Galt, Waterloo	.....	65,378	3,943	9,378	1,170	3,346	12,944
30. Gananoque, Leeds	1,162	21,922	1,696	.....	.....	650	13,000
31. Goderich, Huron	3,093	30,220	957	11,557	76,228	4,022	165,054
32. Gore Bay, Manitoulin	1,576	3,453	90	.....	.....	.....	.....
33. Gravenhurst, Muskoka	157	10,538	731	.....	.....	6	11,450
34. Harriston, Wellington	2,467	11,343	605	.....	.....	82	18,300
35. Hawkesbury, Prescott	773	9,851	1,702	.....	.....	.....	6,800
36. Hespeler, Waterloo	819	12,060	303	1,717	.....	.....	9,600
37. Huntsville, Muskoka	676	13,088	699	6,773	.....	.....	14,000
38. Ingersoll, Oxford	60	37,397	3,005	.....	.....	1,642	11,529
39. Kincardine, Bruce	4,803	15,558	965	4,702	5,157	561	1,400
40. Kingsville, Essex	3,146	12,211	451	3,383	.....	10	4,500
41. Leamington, Essex	80	21,661	779	7,811	.....	.....	26,934
42. Lindsay, Victoria	1,236	58,806	3,484	8,526	1,517	1,509	26,440
43. Listowel, Perth	.....	19.749	900	.....	3,057	131	1,161
44. Little Current, Manitoulin	893	2,651	404	.....	.....	.....	.....
45. Mattawa, Nipissing	3	8,328	1,159	.....	.....	.....	2,626
46. Meaford, Grey	3,668	16.200	1,041	1,444	.....	692	34,508
47. Midland, Simcoe	.....	21,937	1.296	670	23,081	10	11,276
48. Milton, Halton	2,327	8,268	579	1,164	690	254	1,000
49. Mitchell, Perth	259	15,164	913	2,488	.....	45	72,375
50. Mount Forest, Wellington	856	15,583	1,380	7,845	1,842	642	31,700
51. Napanee, Lennox & Addingt'n	2,063	27,319	2.171	50	.....	9	.....
52. Newmarket, York	1,189	12,756	832	6,464	664	13	4,000
53. Niagara, Lincoln	227	11,865	912	2.750	.....	25	6,200
54. Niagara Falls, Welland	20,835	50,515	1,428	‡27,627	.....	2,189	44,607
55. North Bay, Nipissing	1,209	16,596	1,982	3.720	.....	133	19,000
56. North Toronto, York	.....	19,262	554	2,172	1,821	550	8.433
57. Oakville, Halton	150	9,492	253	.....	1.152	310	5,125
58. Orangeville, Dufferin	.....	19,509	1,026	2,094	1,694	531	12,349

* Including $34,337 for light and power. † Including $18,283 for electric light and power.
‡ Including $15,235 for electric light and power rate.

TOWN MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Borrowed on debentures.	Miscellaneous.	Total receipts.	Disbursements, 1902. Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water-works, etc.	Charities.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
12,000	1,280	38,362	1,951	3,269	887	894	1,993	17,103	108	.....	12
9,872	965	43,855	1,390	1,893	540	449	3,368	75	74	1,041	13
108,967	1,336	491,633	3,886	40,877	5,139	7,758	10,388	84,875	1,829	.....	14
1,400	61	37,902	1,186	1,995	941	438	3,191	184	273	2,096	15
8,689	403	44,994	895	1,439	922	250	10,282	.....	85	596	16
43,360	3,467	106,131	2,708	6,707	1,885	1,442	3,510	29,323	536	1,754	17
49,700	2,879	112,580	2,258	13,177	1,767	1,273	10,298	23,477	757	2,191	18
4,216	4	17,957	702	326	379	308	1,482	4,216	11	.....	19
24,061	345	106,615	1,760	8,815	2,003	2,620	5,659	11,859	1,145	1,807	20
.....	472	26,289	646	3,353	388	676	2,341	184	280	1,850	21
5,000	330	38,371	523	4,565	470	458	1,001	298	199	599	22
2,500	1,030	34,137	1,416	2,264	1,543	978	2,239	1,248	562	1,562	23
.....	259	26,088	606	3,438	654	342	1,359	3,993	440	720	24
.....	22	12,485	479	222	786	55	730	556	162	268	25
.....	1,545	26,493	346	3,214	899	501	2,821	.....	44	387	26
.....	119	15,777	338	1,044	459	320	978	.....	128	500	27
32,000	3,437	173,590	2,289	22,682	3,188	2,309	3,609	24,141	264	.....	28
32,046	13,614	141,819	3,132	15,933	3,494	2,182	20,229	17,843	1,347	3,664	29
.....	43	38,473	883	2,920	718	1,383	2,831	42	183	1,318	30
83,193	1,799	376,123	2,470	9,529	1,653	850	1,912	2,224	245	963	31
.....	.....	5,119	187	78	134	7	306	400	.....	.....	32
.....	219	23,101	803	1,211	1,950	549	721	435	309	.....	33
10,000	294	43,091	755	1,336	484	210	554	.....	17	732	34
.....	393	19,519	558	32	544	846	2,578	283	.....	716	35
.....	209	24,708	530	5,193	582	370	2,239	1,022	100	686	36
22,000	1,931	59,167	1,268	5,777	1,710	219	2,020	11,310	23	.....	37
8,518	.....	62,151	1,821	6,829	1,150	1,318	6,742	.....	363	2,540	38
4,757	2,250	40,153	592	4,897	963	362	1,721	767	40	673	39
2,054	386	26,141	699	2,135	317	21	1,463	*2,050	254	710	40
.....	312	57,577	875	3,565	397	93	745	6,198	449	604	41
.....	587	102,105	3,935	10,793	2,369	2,056	20,291	8,397	1,085	3,012	42
13,049	2,520	40,567	688	2,482	824	210	1,282	451	148	905	43
.....	6	3,954	207	19	137	353	474	.....	8	.....	44
.....	595	12,711	747	1,328	354	495	904	.....	23	.....	45
18,547	26,426	102,526	1,545	2,201	2,740	89	3,453	3,166	30	617	46
.....	972	59,242	1,205	2,096	943	376	2,475	31,895	72	947	47
2,000	5	16,287	592	1,291	496	127	679	501	20	436	48
5,191	1,125	97,560	855	4,628	884	353	3,158	500	199	843	49
13,700	67	73,615	704	8,505	544	30	426	495	56	1,290	50
.....	163	31,775	1,491	4,370	511	655	4,021	177	727	2,400	51
.....	1,065	26,983	742	5,922	548	132	1,121	1,111	37	872	52
.....	35	22,014	815	3,850	422	445	1,885	.....	29	802	53
10,655	1,508	159,364	5,439	21,989	1,888	1,644	8,834	14,762	1,024	.....	54
.....	3	42,643	883	4,829	916	1,111	2,458	6,471	166	.....	55
460	101	33,353	1,300	3,153	721	400	2,085	5,617	341	.....	56
2,000	905	19,387	491	1,196	390	500	1,729	.....	170	.....	57
.....	236	37,439	946	2,464	871	736	3,578	476	105	875	58

* Gas plant.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Towns.	Disbursements, 1902.—*Continued.*							
	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.
	$	$	$	$	$	$	$	$
12. Bracebridge	3,374	725	1,648	3,000	2,718	654	38,324	38
13. Brampton	7,150	755	8,881	8,104	8,007	1,659	43,386	469
14. Brockville	22,522	38,344	8,371	210,568	32,858	20,824	488,239	3,394
15. Carleton Place	7,500	.....	3,100	4,000	3,129	953	28,986	8,916
16. Clinton	4,500	2,362	403	8,599	2,629	633	33,595	11,399
17. Cobourg	28,106	600	5,488	10,000	13,102	607	105,768	363
18. Collingwood	16,751	557	10,586	2,383	13,843	10,163	109,481	3,099
19. Copper Cliff	2,500	.....	518	4,000	315	1,289	16,046	1,911
20. Cornwall	14,352	5,533	9,178	24,961	12,129	4,794	106,615	.....
21. Deseronto	6,155	.....	2,006	1,912	2,868	1,723	24,382	1,907
22. Dresden	2,815	.....	1,331	11,000	1,352	5,397	30,008	8,363
23. Dundas	6,598	3,378	2,957	3,500	3,706	2,158	34,109	28
24. Dunnville	3,400	403	1,644	6,754	1,803	532	26,088	.....
25. Durham	2,112	.....	1,633	.....	1,853	234	9,090	3,395
26. Essex	2,586	1,500	1,817	9,000	2,284	657	26,056	437
27. Forest	2,900	300	2,163	4,100	907	419	14,556	1,221
28. Fort William	10,264	16,394	2,253	66,000	17,967	999	172,359	1,231
29. Galt	20,025	17,942	918	14,800	13,647	6,663	141,819	.....
30. Gananoque	7,000	2,610	336	13,500	3,445	405	37,574	899
31. Goderich	7,188	41,063	1,394	242,019	11,218	51,747	374,475	1,648
32. Gore Bay	940	235	.....	.....	119	187	2,593	2,526
33. Gravenhurst	4,400	24	1,761	8,394	1,560	370	22,487	614
34. Harriston	3,724	11,413	1,062	18,900	1,788	781	41,756	1,335
35. Hawkesbury	4,569	1,370	211	5,300	505	1,870	19,382	137
36. Hespeler	3,173	.....	1,077	7,600	1,107	456	24,135	573
37. Huntsville	3,027	.....	1,467	26,913	3,286	1,659	58,679	488
38. Ingersoll	9,095	12,180	626	10,868	7,903	716	62,151	.....
39. Kincardine	5,135	9,477	1,327	.....	3,362	5,026	34,342	5,811
40. Kingsville	2,223	.....	3,480	7,400	2,685	997	24,434	1,707
41. Leamington	5,278	.....	4,699	27,626	4,968	562	56,059	1,518
42. Lindsay	15,979	2,326	6,048	8,305	13,907	2,919	101,422	683
43. Listowel	3,991	5,065	1,929	16,484	5,807	301	40,567	.....
44. Little Current	887	.....	.....	.....	.....	232	2,317	1,637
45. Mattawa	4,108	.....	724	1,439	1,503	505	12,130	581
46. Meaford	4,285	.....	1,614	32,377	1,929	*43,760	97,806	4,720
47. Midland	5,050	171	2,525	4,670	5,990	827	59,242	.....
48. Milton	2,013	100	2,274	1,251	2,395	348	12,523	3,764
49. Mitchell	3,727	710	1,079	77,333	2,587	388	97,244	316
50. Mount Forest	6,433	5,430	1,872	40,200	5,731	393	72,109	1,506
51. Napanee	6,800	.....	4,564	.....	2,739	1,465	29,920	1,855
52. Newmarket	3,930	1,036	2,733	1,500	2,872	403	22,959	4,024
53. Niagara	2,382	.....	2,231	5,609	2,545	449	21,464	1550
54. Niagara Falls	10,891	.....	11,346	39,100	†18,177	‡6,604	141,698	17,666
55. North Bay	6,683	.....	1,901	11,900	3,382	425	41,125	1,518
56. North Toronto	4,261	1,952	917	5,410	4,619	2,577	33,353	.....
57. Oakville	2,900	309	.....	2,000	1,346	265	11,296	8,091
58. Orangeville	5,500	2,958	2,719	9,915	5,550	746	37,439	.....

* Including $25,000 bonus to G.T.R. omitted in 1901, and $10,000 paid Meaford Manufacturing Co.
† Including $1,350 interest paid on electric light plant mortgage.
‡ Including paid County $1,576 ; paid mortgage principal $2,000 ; sundries $1,476.

TOWN MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES.—*Continued.*

Assets on December 31, 1902.					Liabilities on December 31, 1902.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
1,631	2,000	85,000	21,143	109,812	1,818	84,041	7,136	1,844	94,839	12
4,248	755	120,000	12,479	137,951	4,600	143,358	2,000	370	150,328	13
35,717	201,425	359,076	216,064	815,676	.....	801,562	51,503	240	853,305	14
51	.....	.....	58,700	67,667	5,000	74,700	.....	508	80,208	15
354	38,950	.....	24,500	75,203	2,296	74,399	.....	490	77,185	16
6,458	600	.....	153,520	160,941	.....	245,907	12,000	480	258,387	17
293	5,460	133,192	106,895	248,939	2,326	336,170	5,175	11,661	355,332	18
1,049	.....	.....	5,201	8,161	1,966	3,698	1,000	3,652	10,316	19
51,440	26,751	134,235	50,154	262,580	13,146	285,078	22,172	.....	320,396	20
62	.....	44,000	9,564	55,534	1,700	61,916	600	100	64,316	21
3,756	.....	12,000	36,150	60,269	4,800	30,160	5,000	.....	39,960	22
12,643	24,733	47,574	80,662	165,640	.....	80,328	183	321	80,832	23
8,318	9,755	15,000	13,947	47,020	2,950	35,448	8,396	140	46,934	24
1,418	10,000	.....	6,600	21,413	.....	36,741	227	110	37,078	25
3,847	1,500	*32,931	7,452	46,167	3,513	39,252	5,973	1,500	50,238	26
832	7,000	.....	15,443	24,496	400	22,791	700	.....	23,891	27
18,217	73,758	109,000	102,260	304,466	165	295,279	90,562	3,376	389,382	28
4,442	74,772	163,500	91,321	334,035	.....	328,385	12,944	2,656	343,985	29
1,618	24,288	30,000	28,067	84,872	.....	76,200	2,000	835	79,035	30
5,034	56,791	101,777	44,586	209,836	.....	258,702	15,000	3,605	277,307	31
223	1,598	.....	2,850	7,197	1,624	1,850	.....	.....	3,474	32
1,452	134	.....	23,050	25,250	1,700	28,962	4,500	100	35,262	33
3,886	11,998	.....	22,777	39,996	.....	38,398	15,177	.....	53,575	34
4,351	1,370	.....	700	6,558	687	6,922	2,500	.....	10,109	35
1,944	.....	14,037	15,208	31,762	41	22,586	2,000	358	24,985	36
1,193	.....	55,650	4,160	61,491	3,500	50,429	5,236	285	59,450	37
9,598	65,874	.....	84,131	159,603	.....	181,635	11,529	6,594	199,758	38
5,445	19,600	57,029	36,472	124,357	3,475	73,158	1,400	175	78,208	39
1,524	.....	38,000	12,096	53,327	.....	45,648	.....	1,156	46,804	40
14,706	.....	40,000	23,067	79,291	5,846	88,904	10,600	415	105,765	41
12,661	38,740	83,600	85,631	221,315	2,629	308,019	38,279	3,600	352,527	42
1,135	31,297	9,500	27,251	69,183	600	121,690	1,161	624	124,075	43
727	.....	.....	2,485	4,849	375	3,548	.....	903	4,826	44
8,098	.....	.....	11,032	19,711	3,045	26,926	1,925	258	32,154	45
3,131	.....	22,000	26,754	56,605	.....	103,866	11,858	4,165	119,889	46
5,756	171	68,819	16,928	91,674	1,158	145,541	11,276	3,786	161,761	47
1,688	12,190	25,500	8,470	51,612	.....	47,414	.....	.....	47,414	48
318	2,083	24,000	14,490	41,207	870	50,304	1,000	378	52,552	49
287	17,043	44,500	34,461	97,797	.....	122,459	6,000	.....	128,459	50
15,869	.....	.....	26,296	44,020	10,200	51,149	.....	298	61,647	51
301	1,036	52,350	21,479	79,190	2,277	57,621	2,500	327	62,725	52
3,282	.....	51,500	26,589	81,921	758	46,566	3,807	268	51,399	53
10,367	.....	193,050	261,343	482,426	.....	312,650	30,407	21,000	364,057	54
14,498	.....	53,247	4,317	73,580	5,757	51,788	15,500	42	73,087	55
11,638	†22,580	56,366	23,852	114,436	.....	91,716	8,433	‡1,979	102,128	56
1,438	10,478	.....	30,180	50,187	3,566	27,500	5,125	104	36,295	57
4,202	14,043	50,132	23,043	91,420	4,833	118,572	2,848	502	126,755	58

* Including fire hall appliances. † Including $2,877 not previously in returns—explained by personal visit of Town Treasurer, Nov. 2, 1903.

‡ Due Tp. of York for share of debentures.

STATISTICS OF ONTARIO—

RECEIPTS, DISBURSEMENTS,

Town Municipalities and Counties in which located.	Receipts, 1902. Balance from 1901.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$		$	$
59. Orillia, Simcoe	12,690	35,211	2,665	15,733	36	36	15,316
60. Oshawa, Ontario	.....	25,017	1,269	.....	1,746	.....	4,086
61. Owen Sound, Grey	28,641	57,899	3,685	9,783	17,432	6,284	10,800
62. Palmerston, Wellington	832	10,462	423	.....	649	1,045	6,384
63. Paris, Brant	243	21,097	1,209	8,485	.....	196	14,600
64. Parkhill, Middlesex	300	8,478	815	.....	.....	254	6,936
65. Parry Sound, Parry Sound	640	12,949	1,376	6,905	780	269	5,903
66. Pembroke, Renfrew	.....	29,761	2,317	7,775	8,370	355	21,000
67. Penetanguishene, Simcoe	1,976	15,866	860	2,504	.....	137	.....
68. Perth, Lanark	2,938	25,741	2,056	.....	.....	13	.....
69. Peterborough, Peterborough	.....	86,391	8,358	22,958	.....	7,124	253,346
70. Petrolea, Lambton	.....	51,680	2,445	15,615	.....	118	11,526
71. Picton, Prince Edward	.....	22,709	2,412	8,949	354	12	1,064
72. Port Arthur, Thunder Bay	2,294	47,345	5,191	25,828	.....	3,519	79,000
73. Port Hope, Durham	2,190	30,596	4,621	3,140	421	866	46,531
74. Prescott, Grenville	9,843	20,845	3,161	9,358	.....	62	16,600
75. Preston, Waterloo	109	13,582	642	.....	1,000	250	5,400
76. Rat Portage, Rainy River	452	54,301	2,469	7,196	.....	234	206,500
77. Renfrew, Renfrew	156	31,973	1,197	6,470	2,994	93	59,203
78. Ridgetown, Kent	.....	16,315	1,289	.....	.....	.....	17,570
79. St. Marys, Perth	369	29,708	1,420	5,510	.....	1	44,500
80. Sandwich, Essex	834	6,978	438	1,963	.....	.....	7,000
81 Sarnia, Lambton	13,583	63,075	3,201	18,125	1,370	379	163,467
82. Sault Ste. Marie, Algoma	.....	53,729	7,515	.....	....	4,083	57,529
83. Seaforth, Huron	2,171	15,313	1,065	689	1,246	514	8,906
84. Simcoe, Norfolk	.....	23,182	964	.....	.....	.....	1,730
85. Smith's Falls, Lanark	.....	36,753	3,267	4,837	.....	357	82,613
86. Stayner, Simcoe	.....	5,329	384	613	.....	.....	5,041
87. Strathroy, Middlesex	705	20,035	1,143	.....	.....	15	49,594
88. Sturgeon Falls, Nipissing	3,213	11,325	995	.....	.....	.....	2,650
89. Sudbury, Nipissing	.....	13,711	799	*10,203	.....	.....	10,159
90. Thessalon, Algoma	6,824	5,569	314	2,774	.....	.....	2,800
91. Thornbury, Grey	2,094	4,769	112	.....	.....	29	2,000
92. Thorold, Welland	10,327	15,668	574	†2,654	.....	150	10,000
93. Tilsonburg, Oxford	2,991	19,195	1,372	.....	972	1,405	12,000
94. Toronto Junction, York	29,190	64,777	1,989	10,645	100	312	.....
95. Trenton, Hastings	975	32,289	2,655	2,328	.....	425	70,570
96. Uxbridge, Ontario	276	13,789	961	.....	.....	386	25,000
97. Vankleek Hill, Prescott	1,423	8,126	655	.....	.....	.....	2,450
98. Walkerton, Bruce	953	17,875	1,432	2,003	3,917	41	11,480
99. Walkerville, Essex	.....	25,617	610	.....	.....	103	23,200
100. Wallaceburg, Kent	.....	19,850	1,308	.....	10,200	428	14,748
101. Waterloo, Waterloo	.....	27,959	1,333	4,104	894	148	12,460
102. Welland, Welland	467	17,250	880	3,476	.....	699	5,767
103. Whitby, Ontario	2,076	16,203	864	.....	500	.....	41,472
104. Wiarton, Bruce	315	13,129	936	3,075	.....	329	41,000
105. Wingham, Huron	670	14,637	1,552	‡700	8,206	253	5,431

* Including $6,530 electric light rates. † Including $2,529 for electric light and power rates.
‡ Surplus water power.

TOWN MUNICIPALITIES.

ASSETS AND LIABILITIES, 1902.

Borrowed on debentures.	Miscellaneous.	Total receipts.	Disbursements, 1902. Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings.	Charities.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
2,900	*2,213	86,800	2,472	8,937	1,596	834	3,847	37,313	568	2,137	59
.....	20	32,138	950	2,832	1,191	899	3,573	277	790	1,445	60
49,216	1,215	184,955	4,426	5,638	2,482	3,633	12,941	10,060	562	.....	61
7,156	414	27,365	509	754	800	404	2,723	.....	18	708	62
11,115	851	57,796	2,193	7,583	696	872	7,025	3,336	463	1,100	63
.....	.....	16,783	439	921	506	217	5,017	.....	45	493	64
5,850	236	34,908	1,032	4,483	1,051	435	1,637	6,819	89	.....	65
18,000	406	87,984	2,071	4,898	788	865	16,383	6,950	.....	2,093	66
33,000	494	54,837	691	3,347	445	462	1,010	1,027	91	740	67
17,186	429	48,363	880	3,886	904	796	21,553	274	286	2,325	68
247,597	1,249	627,023	3,804	23,099	3,541	6,429	14,887	245,842	4,262	.....	69
15,816	665	97,865	2,671	11,812	2,664	1,137	11,460	8,630	419	1,303	70
.....	75	35,575	1,202	9,303	615	1,023	5,566	629	793	1,089	71
131,000	4,401	298,578	1,936	3,679	2,041	2,013	20,733	†50,328	557	.....	72
.....	243	88,608	3,022	5,121	966	691	4,188	1,165	443	1,754	73
.....	332	60,201	1,342	10,638	4,175	788	8,611	2,291	208	.....	74
2,000	12	22,995	565	1,704	425	204	1,128	275	10	878	75
.....	431	271,583	1,860	9,512	2,996	1,612	1,173	6,240	192	.....	76
33,505	313	135,904	692	6,342	635	585	12,797	1,826	628	1,021	77
10,000	1,254	46,428	552	3,226	754	576	693	9,609	159	.....	78
.....	2,789	84,297	922	6,269	2,703	1,273	4,396	5,111	499	.....	79
6,000	27	23,240	948	3,058	580	32	2,458	668	274	387	80
5,000	1,364	269,564	4,853	16,677	2,512	3,333	16,819	34,401	2,361	5,386	81
125,010	‖5,800	253,666	7,765	3,594	1,633	1,511	48,858	98,398	258	.....	82
‡12,589	109	42,602	857	2,096	1,217	415	3,155	6,100	25	564	83
.....	367	26,243	796	4,473	627	614	1,737	207	384	1,463	84
13,950	1,061	142,838	1,496	8,059	2,462	668	6,042	43,709	187	2,862	85
.....	53	11,420	540	525	151	36	582	.....	35	369	86
2,734	677	74,903	981	2,741	647	527	4,060	.....	84	1,409	87
.....	651	18,834	351	2,706	582	50	1,636	831	24	.....	88
.....	19	34,891	951	11,168	574	30	1,558	1,177	115	.....	89
6,000	109	24,390	1,203	1,650	395	445	366	8,343	85	.....	90
.....	39	9,043	307	288	144	38	2,632	19	92	214	91
2,292	65	41,730	710	1,900	856	579	§13,986	3,214	66	.....	92
¶12,435	413	50,783	670	1,817	751	639	10,201	.....	203	1,295	93
.....	6,886	113,899	2,075	18,866	7,568	4,517	9,703	**4,626	659	.....	94
.....	42	109,284	2,187	3,855	2,349	1,489	4,353	350	766	.....	95
7,154	198	47,764	525	1,297	918	421	3,721	2,091	453	565	96
6,037	490	19,181	262	394	259	12	368	508	198	425	97
5,693	1,043	44,437	1,016	1,781	1,383	674	2,909	1,184	203	972	98
27,668	18	77,216	1,195	3,907	652	1,979	32,888	.....	49	.....	99
30,000	720	77,254	1,012	3,910	751	850	3,919	.....	183	735	100
9,970	614	57,482	2,200	5,607	563	487	6,675	8,371	213	1,663	101
1,875	198	30,612	2,009	3,274	1,225	186	1,169	1,134	32	995	102
.....	99	61,214	1,327	1,847	1,255	228	1,985	1,019	131	1,259	103
40,334	.....	99,018	726	2,563	1,002	358	5,187	473	18	654	104
1,898	170	33,517	746	1,176	884	633	2,305	80	19	390	105

* Including $2,152 for installation of electric light and water service.
† Including Telephone $10,000. Current River development $30,000.
‡ Including $1,000 issued previously for library, but not then negotiated.
‖ Including $5,000 Carnegie grant to library. § Including $10,688 for cement walks.
¶ Including $10,000 for bonus. ** Including $1,380 rent paid to City of Toronto for use of sewers.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Disbursements, 1902.—*Continued.*

Towns.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.
	$	$	$	$	$	$	$	$
59. Orillia	6,686	281	9,653	67	10,633	1,399	86,423	377
60. Oshawa	9,080	.....	3,710	2,806	3,696	889	32,138	.....
61. Owen Sound	23,971	19,606	4,134	52,000	27,017	1,619	168,089	16,866
62. Palmerston	2,800	1,497	1,809	10,950	4,182	211	27,365	.....
63. Paris	7,490	750	3,939	16,928	3,531	625	56,531	1,265
64. Parkhill	769	1,127	.....	5,250	911	328	16,023	760
65. Parry Sound	3,500	1,235	1,970	6,250	3,401	*2,874	34,776	132
66. Pembroke	9,510	2,696	11,777	17,596	8,491	3,333	87,451	533
67. Penetanguishene	3,518	20	2,491	33,500	5,314	1,343	53,999	838
68. Perth	8,357	380	2,969	.....	1,078	1,488	45,176	3,187
69. Peterborough	28,400	25,054	1,645	240,476	22,028	7,556	627,023	.....
70. Petrolea	9,000	.....	11,338	26,847	9,732	852	97,865	.....
71. Picton	8,600	1,242	1,829	908	1,640	876	35,315	260
72. Port Arthur	18,480	21,508	.....	67,750	21,743	†79,277	290,045	8,533
73. Port Hope	8,683	1,021	2,020	47,913	10,708	652	88,347	261
74. Prescott	6,203	.....	2,973	6,400	6,731	1,543	51,903	8,298
75. Preston	3,588	.....	3,217	6,100	2,110	603	20,807	2,188
76. Rat Portage	17,451	2,251	8,709	201,245	13,462	4,148	270,851	732
77. Renfrew	8,426	875	6,551	89,314	5,012	1,200	135,904	.....
78. Ridgetown	5,715	.....	3,932	17,228	3,697	287	46,428	.....
79. St. Marys	7,600	.....	6,057	43,500	4,452	1,446	84,228	69
80. Sandwich	1,552	.....	1,193	5,000	1,845	491	18,486	4,754
81. Sarnia	19,200	2,128	29,727	105,075	21,814	§5,146	269,432	132
82. Sault Ste. Marie	19,891	6,287	297	41,455	22,824	895	253,666	.....
83. Seaforth	4,743	2,662	.....	12,006	2,545	1,421	37,806	4,796
84. Simcoe	5,977	.....	2,446	1,345	3,717	‖2,457	26,243	.....
85. Smith's Falls	9,000	.....	8,508	38,622	9,381	3,645	134,641	8,197
86. Stayner	1,753	.....	482	5,682	1,082	183	11,420	.....
87. Strathroy	6,200	2,815	3,667	48,300	2,408	1,064	74,903	.....
88. Sturgeon Falls	4,074	.....	934	3,500	1,850	2,287	18,825	9
89. Sudbury	2,149	.....	2,125	10,688	3,223	848	34,606	285
90. Thessalon	1,481	7	362	6,500	1,559	355	22,751	1,629
91. Thornbury	1,779	78	297	2,000	267	140	8,295	748
92. Thorold	4,759	.....	3,366	7,000	3,362	955	40,753	977
93. Tillsonburg	4,910	5,606	784	5,000	5,279	¶10,931	48,086	2,697
94. Toronto Junction	21,482	13,831	1,000	.....	10,744	9,388	104,459	9,440
95. Trenton	10,084	122	587	68,670	8,160	4,726	107,698	1,586
96. Uxbridge	3,600	1,549	134	28,800	2,729	484	47,287	477
97. Vankleek Hill	10,594	.....	239	3,530	645	938	18,372	809
98. Walkerton	6,093	994	7,621	11,053	5,598	1,138	42,619	1,818
99. Walkerville	4,776	.....	4,485	22,829	2,425	1,642	76,827	389
100. Wallaceburg	4,779	10,000	3,274	‡12,422	4,415	**31,004	77,254	.....
101. Waterloo	6,486	746	4,560	12,038	5,589	2,284	57,482	.....
102. Welland	5,550	2,711	1,674	4,872	4,827	718	30,376	236
103. Whitby	6,700	500	965	39,427	3,129	675	60,447	767
104. Wiarton	5,200	489	4,095	46,800	4,910	††26,403	98,878	140
105. Wingham	3,865	9,462	2,459	4,800	4,108	996	31,923	1,594

* Including $2,560 on account of small-pox visitation.
† Including $50,000 bonus to O. & R.R. Ry.
‡ Including $440 due treasurer in 1901, overlooked.
‖ Including $1,100 on account of smallpox visitation.
¶ Including $10,000 bonus to "Shirling and Dietrich."
§ Including smallpox Isolation Hospital and attendance, $2,536.
** Including $30,000 bonus to beet sugar factory.
†† Including $25,000 bonus to beet sugar factory.

TOWN MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1902.—*Continued.*

Assets on December 31, 1902.					Liabilities on December 31, 1902.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$ —	$	$	$	$	$	$	$	$	$	
9,706	1,151	102,700	151,008	264,942	10,472	207,224	15,316	545	233,557	59
2,755	46,575	.....	18,180	67,510	.....	81,128	4,086	360	85,574	60
78,133	131,382	136,217	117,070	479,668	23,036	594,399	39,282	1,778	658,495	61
3,543	26,476	.....	7,648	37,667	*891	92,169	184	.....	93,244	62
165	7,250	78,499	54,300	141,479	.....	68,969	4,200	.....	73,169	63
714	6,899	.....	15,429	23,802	2,435	14,200	1,686	459	18,780	64
4,881	3,267	69,960	10,903	89,143	940	63,514	5,903	5,200	75,557	65
36,032	3,565	68,000	47,900	156,030	16,490	130,187	21,000	877	168,554	66
4,206	5,690	38,000	15,636	64,370	1,696	83,638	.....	†5,138	90,472	67
1,003	380	.....	26,200	30,770	3,749	30,617	.....	600	34,966	68
7,835	140,932	236,859	333,230	718,856	.....	581,223	67,302	10,234	658,759	69
13,513	.....	187,573	64,995	266,081	11,406	218,114	1,526	6,557	237,603	70
981	1,242	53,947	11,918	68,348	.....	42,980	1,064	589	44,633	71
10,954	57,055	139,249	132,698	348,489	5,047	390,275	87,479	251	483,052	72
11,847	21,000	80,280	193,528	306,916	.....	244,882	7,031	2,563	254,476	73
15,179	.....	126,283	56,317	206,077	3,646	152,692	12,200	600	169,138	74
3	2,000	.....	20,041	24,232	1,463	38,215	.....	427	40,105	75
10,744	4,508	118,243	75,618	209,845	9,100	189,783	101,855	750	301,488	76
2,765	1,005	95,000	18,525	117,295	528	141,472	9,794	250	152,044	77
1,153	.....	.....	‡24,200	25,353	928	·66,697	5,685	.....	73,310	78
3,534	.....	62,000	31,754	97,357	.....	80,503	6,000	630	87,133	79
7,643	.....	19,000	12,709	44,106	2,837	29,250	7,040	1,293	40,420	80
40,515	32,871	136,550	198,342	408,410	.....	267,554	110,810	9,492	387,856	81
25,951	285,038	.....	35,726	346,715	7,938	514,996	57,529	17,716	598,179	82
1,082	35,115	13,000	19,800	73,793	.....	70,589	.....	2,700	73,289	83
2,439	.....	.....	25,640	28,079	.....	74,288	1,730	999	77,017	84
1,642	.....	213,900	56,345	280,084	.....	232,707	82,613	2,225	317,545	85
2,264	.....	25,000	2,665	29,929	1,506	22,182	1,391	20	25,099	86
866	‖6,815	.....	13,030	20,711	1,414	35,334	5,294	.....	42,042	87
3,274	.....	17,131	2,393	22,807	515	33,707	692	648	35,562	88
2,285	.....	60,000	9,191	71,761	1,352	53,751	3,735	5,395	64,233	89
1,396	432	27,347	6,300	37,114	.....	29,761	1,344	¶425	31,530	90
17	1,378	.....	1,822	3,965	816	4,463	.....	106	5,385	91
4,237	.....	25,000	19,026	49,240	4,629	44,561	3,000	2,792	54,982	92
609	31,042	33,500	33,535	101,383	3,790	112,103	7,000	.....	122,893	93
9,759	§13,831	175,000	**527,100	735,130	11,224	1,063,650	.....	6,139	1,081,013	94
19,837	8,855	15,000	119,581	164,859	684	145,595	13,384	a10,505	170,168	95
3,186	12,439	10,000	24,697	50,799	726	46,920	3,797	669	52,112	96
2,466	.....	.....	4,850	8,125	1,345	10,446	3,098	4,610	19,499	97
1,200	12,680	45,000	31,577	92,275	.....	††107,818	§2,614	400	110,832	98
110	.....	.....	41,876	42,375	500	43,660	23,200	264	67,624	99
9,271	900	.....	28,064	38,235	735	91,471	22,566	.....	114,772	100
1,275	2,476	55,000	80,819	139,570	6,453	127,152	4,925	2,528	141,058	101
5,247	19,049	57,458	¶¶52,786	134,776	1,300	102,933	5,767	.....	110,000	102
10,672	.....	4,000	23,179	38,618	.....	58,472	11,497	242	70,211	103
962	22,757	30,000	15,838	69,697	774	113,291	2,009	.....	116,074	104
311	30,862	20,300	18,702	71,769	390	96,890	631	697	98,608	105

* As per County audit. † Payable to Tp. of Tiny as share of debentures.
‡ Including $15,250 for new town hall. Omitting $2,000 written off Industrial Loan mortgages. †† Including $2,106 unsold consolidated debentures held in bank as collateral. § Including $[illegible] to meet matured coupons. ** Including $350,000 for bridge and subway and $150,000 for sewers. ‖ Cash $807 overpaid in 1901.
¶ Being balance on road machine. a Including $7,645 due county for various services. ¶¶ Including $20,288 for permanent roadway, sidewalk and iron bridge not previously reported in returns.

STATISTICS OF ONTARIO

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

County Municipalities.	Receipts, 1902.						
	Balance from 1901.	Rates from local municipalities.	Licenses.	Fees, rents, tolls, fines, etc.	Surplus fees from Registrar.	Interest and dividends.	From Legislature for schools.
	$	$	$	$	$	$	$
1. Brant	10,202	12,720	105	231	24	199	1,907
2. Bruce	9,539	36,039	1,117	142	671	229	5,051
3. Carleton	2,243	22,109	211	634	353	887	3,580
4. Dufferin	105	15,122	506	109	78	567	2,141
5. Elgin	10,856	36,067	390	.....	213	316	3,589
6. Essex	4,231	31,427	170	226	1,169	33	3,605
7. Frontenac	249	30,309	157	2,895	.....	276	3,067
8. Grey	.....	28,054	788	138	683	1,035	6,119
9. Haldimand	78	25,298	80	18	.....	11	2,023
10. Haliburton	1,149	3,304	48	224	.....	11	2,947
11. Halton	2,532	10,886	174	6	.....	56	1,475
12. Hastings	14	41,851	245	506	561	635	4,564
13. Huron	1,576	36,181	1,221	66	1,795	931	5,738
14. Kent	199	35,522	423	632	958	51	4,801
15. Lambton	2,381	40,816	136	38	1,752	239	4,256
16. Lanark	1,177	24,570	225	20	.....	.....	2,993
17. Leeds and Grenville	202	24,352	496	294	57	651	4,209
18. Lennox and Addington	11,686	24,357	321	130	.....	172	2,783
19. Lincoln	2,395	24,906	235	44	268	72	1,714
20. Middlesex	4,005	70,513	323	85	137	1,971	5,645
21. Norfolk	9,910	20,449	206	102	.....	108	2,759
22. Northumberland & Durham	7,828	42,462	662	25	8	347	5,246
23. Ontario	12,934	28,566	304	53	121	.....	3,827
24. Oxford	37,788	43,560	720	.....	991	944	3,792
25. Peel	429	18,797	290	42	.....	.....	2,062
26. Perth	17,222	43,065	936	37	83	763	3,633
27. Peterborough	988	23,396	305	86	249	289	2,753
28. Prescott and Russell	140	16,179	305	57	.....	267	2,343
29. Prince Edward	35	11,800	60	56	.....	2	1,580
30. Renfrew	4,231	16,793	406	32	112	463	5,021
31. Simcoe	3,276	51,753	685	361	2,175	.....	6,958
32. Stormont, Dundas and Glengarry	94	28,567	1,066	80	16	5	5,973
33. Victoria	467	19,022	681	280	127	.....	3,147
34. Waterloo	274	30,264	235	113	359	.....	2,600
35. Welland	.....	19,787	120	47	640	34	2,168
36. Wellington	6,756	39,672	258	158	53	173	3,951
37. Wentworth	22,913	23,000	135	530	867	400	2,975
38. York	.....	63,231	357	523	.....	368	4,797
Totals 1902	190,104	1,114,766	15,102	9,020	14,520	12,505	137,792

COUNTY MUNICIPALITIES.

of the County Municipalities of Ontario for the year ending December 31st, 1902.

Receipts, 1902.—*Continued.*

From Legislature for administration of justice.	Refund of moneys loaned or invested.	Money borrowed for current expenses.	Money borrowed on debentures.	Non-resident taxes collected.	Towns or cities separated from county for various services.	Miscellaneous.	Total receipts.	Attendance at meetings of council and committees.	Allowances, salaries and commissions.	No.
$	$	$	$	$	$	$	$	$	$	
3,781	.....	.....	.....	81	3,408	19	32,677	722	1,452	1
2,383	*9,000	12,000	.....	2,002	.....	1,693	79,866	1,074	2,592	2
10,036	.....	14,000	.....	860	11,087	2,735	68,735	933	2,193	3
1,165	1,700	4,900	.....	215	.....	33	26,641	376	1,160	4
2,768	.....	28,000	.....	1,273	857	‖3,002	87,331	1,295	2,480	5
5,076	.....	27,167	.....	5,268	.....	192	78,564	832	2,522	6
2,193	.....	20,000	.....	1,198	5,749	4,543	70,636	1,531	1,759	7
3,361	*2,455	.....	.....	1,302	.....	271	44,206	1,360	2,189	8
2,960	.....	.....	.....	221	.....	46	30,735	917	1,163	9
150	.....	.....	.....	502	.....	.....	8,335	205	660	10
1,126	.....	3,000	.....	14	.....	15	19,284	258	1,132	11
3,442	17,461	33,055	.....	1,158	7,644	317	111,453	1,482	2,098	12
2,235	17,787	.....	.....	244	.....	1,271	69,045	933	2,900	13
6,257	8,018	51,465	.....	1,002	2,303	2,755	114,386	1,570	2,119	14
4,091	.....	14,000	.....	3,067	.....	450	71,226	869	2,479	15
1,871	.....	15,000	20,000	271	.....	202	66,329	1,169	1,575	16
3,148	.....	9,770	.....	689	4,051	463	48,382	1,433	2,200	17
1,812	.....	.....	.....	263	.....	11	41,535	567	960	18
3,439	.....	2,000	.....	456	2,477	2,139	40,145	737	1,473	19
7,639	85	.....	**24,000	794	7,908	1,868	124,973	1,252	4,407	20
1,489	.....	.....	.....	880	.....	457	36,360	914	1,243	21
3,017	.....	8,000	.....	243	.....	135	67,973	2,754	2,088	22
798	.....	75,000	20,000	537	.....	786	142,926	1,238	1,680	23
2,952	.....	.....	.....	73	1,776	1,568	94,164	1,652	3,185	24
2,888	.....	14,000	.....	102	.....	711	39,321	400	1,192	25
3,651	.....	13,000	.....	44	1,480	‡2,440	86,354	500	1,674	26
.....	217	11,476	§681	1,563	3,097	†8,713	53,813	1,018	2,006	27
2,785	.....	.....	.....	2,686	.....	200	24,962	757	891	28
1,309	.....	.....	.....	57	.....	.....	14,899	291	980	29
2,166	.....	2,500	.....	541	.....	975	33,240	1,170	1,620	30
5,298	.....	20,000	.....	1,893	.....	1,799	94,198	2,281	3,588	31
2,670	.....	38,151	386	366	.....	22	77,396	1,031	1,550	32
1,543	.....	14,000	.....	760	550	401	40,978	889	1,811	33
4,917	.....	16,322	.....	24	.....	211	55,319	1,223	1,449	34
2,957	.....	4,542	.....	2,534	1,576	1,545	35,950	792	1,320	35
4,370	.....	17,000	.....	224	3,181	611	76,407	1,053	2,521	36
6,880	.....	68,132	.....	560	5,841	1,542	133,775	2,282	2,250	37
9,163	.....	.....	c84,000	637	30,034	7,664	200,774	3,008	2,955	38
127,786	56,723	536,480	149,067	34,604	93,019	51,805	2,543,293	42,768	73,516	

*Special deposit. ‖ Including $2,334 Fees of County High School pupils.

**Including $4,000 consolidated debentures bought by the County for its own sinking fund.
‡ Including $2,381 revenue from House of Refuge. c For Court House. §Balance of issue of 1901 not previously reported, being discount. † Including $8,000 from Dominion Government for floating bridge.

STATISTICS OF ONTARIO

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

County Municipalities.	Disbursements, 1902.						
	Printing, advertising, postage and stationery.	Insurance, heating, lighting and care of buildings.	Law costs (including salaries).	Other expenses of municipal government.	Roads and bridges.	Grants to local municipalities for roads and bridges.	Buildings and other works.
	$	$	$	$	$	$	$
1. Brant	436	1,398	200	180	819	.....	603
2. Bruce	1,014	1,501	331	287	9,373	3,826	110
3. Carleton	463	1,491	785	590	4,352	.....	140
4. Dufferin	345	417	23	117	2,798	.....	.....
5. Elgin	434	1,506	531	27	7,488	498	.....
6. Essex	1,213	1,139	165	385	2,375	.....	1,065
7. Frontenac	541	501	112	472	2,138	.....	.....
8. Grey	689	1,406	519	414	2,388	314	1,082
9. Haldimand	486	342	.....	236	413	.....	1,296
10. Haliburton	224	87	.....	16	572	.....	212
11. Halton	337	611	.....	78	241	.....	.....
12. Hastings	562	208	230	55	17,731	6,477	2,820
13. Huron	655	131	43	178	3,577	.....	.....
14. Kent	438	1,517	240	279	765	450	1,384
15. Lambton	733	1,475	130	207	484	.....	1,489
16. Lanark	827	1,106	45	163	111	80	†22,368
17. Leeds and Grenville	762	890	.....	824	1,443	.....	733
18. Lennox and Addington	270	1,047	5	340	655	.....	.....
19. Lincoln	307	1,580	.....	834	3,672	.....	49
20. Middlesex	737	832	89	4	17,127	69	.....
21. Norfolk	640	670	.....	49	386	.....	1,720
22. Northumberland & Durham	771	474	216	3,353	470	545	.....
23. Ontario	907	1,374	24	543	7,106	550	†19,422
24. Oxford	295	1,013	.....	85	3,454	.....	387
25. Peel	514	726	.....	114	1,440	200	500
26. Perth	171	163	50	225	768	5,399	59
27. Peterborough	968	1,464	.....	.....	4,859	1,384	.....
28. Prescott and Russell	339	443	99	10	2,277	100	82
29. Prince Edward	583	467	.....	435	851	.....	855
30. Renfrew	548	504	164	37	3,524	.....	.....
31. Simcoe	901	636	2,229	493	6,750	.....	3,290
32. Stormont, Dundas and Glengarry	396	755	1,859	704	5,957	.....	1,152
33. Victoria	975	1,385	10	68	3,398	100	528
34. Waterloo	949	1,638	37	141	3,990	.....	260
35. Welland	244	819	75	311	437	.....	73
36. Wellington	589	210	.....	492	14,386	3,377	2,323
37. Wentworth	625	2,455	1,119	2,466	*70,593	.....	.....
38. York	859	680	1,349	587	2,247	288	‡84,023
Totals 1902	22,747	35,061	10,679	15,799	211,415	23,657	148,025

* Including $68,132, cost of toll roads purchased by County. † House of Refuge.
‡ Court House.

COUNTY MUNICIPALITIES.—*Continued.*

of the County Municipalities of Ontario for the year ending December 31st, 1902.

Disbursements, 1902.—*Continued.*

Support of the poor and other charities.	Administration of justice, gaol maintenance, etc.	Grants to schools and other payments on education.	Sinking Fund investments and deposits.	Other investments and special deposits.	Debentures redeemed (principal).	Interest paid on debentures.	Refund of money borrowed for current expenses.	Interest or discount on loans and advances.	Non-resident taxes paid local municipalities.	No.
$	$	$	$	$	$	$	$	$	$	
1,185	8,065	3,581	.....	.....	1,212	318	.....	.....	81	1
3,946	8,449	11,826	.....	*10,000	755	717	12,000	187	2,002	2
1,775	20,306	5,743	2,925	.....	.....	3,000	†16,000	203	860	3
120	5,815	5,280	2,350	.....	.....	1,440	5,400	17	471	4
5,006	9,875	12,974	.....	.....	3,113	1,644	34,000	765	659	5
4,627	11,094	10,954	.....	.....	1,942	1,885	‡30,000	356	5,255	6
1,450	12,169	5,789	.....	.....	.....	4,110	33,103	526	1,418	7
1,801	11,492	15,283	1,545	.....	.....	800	.....	.....	1,366	8
225	7,790	9,740	.....	.....	.....	.....	2,963	159	221	9
10	949	3,712	.....	.....	.....	.....	.....	.....	502	10
57	5,338	4,064	.....	.....	.....	.....	3,000	36	14	11
198	14,555	8,927	.....	.....	17,392	.....	35,346	1,440	1,379	12
5,305	9,100	13,931	20,922	.....	.....	3,036	6,000	1	129	13
3,510	13,053	13,091	.....	8,018	3,637	1,545	57,917	1,216	1,089	14
4,387	10,641	12,348	.....	.....	680	497	27,000	150	3,723	15
1,148	7,050	8,130	.....	.....	700	700	12,000	408	271	16
5,755	9,682	13,253	1,974	.....	524	2,619	4,375	487	614	17
500	5,745	8,889	.....	.....	6,500	4,269	.....	.....	433	18
4,468	8,841	5,395	.....	.....	1,588	133	8,000	268	116	19
10,183	26,422	14,268	4,000	.....	24,000	18,837	.....	14	1,013	20
3,483	7,119	9,378	.....	.....	.....	.....	.....	17	880	21
245	18,536	14,178	2,246	.....	.....	700	12,000	176	452	22
69	6,907	10,673	.....	.....	1,436	585	66,000	639	262	23
4,835	8,475	8,724	.....	.....	7,123	4,282	.....	.....	241	24
2,224	6,085	6,137	.....	.....	1,727	69	14,000	265	102	25
5,588	9,981	9,124	8,915	.....	911	9,038	13,000	136	44	26
130	8,994	4,322	1,219	.....	1,550	991	20,000	682	‖1,777	27
50	6,777	7,747	.....	.....	415	304	917	827	2,686	28
582	4,277	4,971	.....	.....	.....	.....	.....	193	57	29
731	5,914	9,615	1,358	.....	2,426	1,425	.....	.....	250	30
6,820	12,207	16,282	.....	.....	1,889	1,753	30,000	161	1,893	31
673	8,307	17,983	.....	.....	3,736	1,212	30,500	719	102	32
659	6,893	6,993	.....	.....	.....	.....	14,000	511	721	33
8,970	7,834	9,128	.....	.....	979	1,365	16,206	365	24	34
3,616	10,670	9,711	.....	.....	.....	.....	3,774	403	2,534	35
7,135	10,758	9,978	.....	.....	.....	.....	16,000	239	223	36
875	11,407	6,845	.....	.....	1,080	719	.....	233	560	37
6,128	*12,136	13,233	.....	.....	4,653	938	35,447	3,383	411	38
108,469	369,708	362,200	47,454	18,018	89,968	68,931	558,948	15,182	34,835	

* Decrease due to new arrangement with City of Toronto.

**Special deposit. †Including 8,000 to retire current loan of 1901 unpaid at close of year, but omitted from returns. ‡ Including $6,000 in payment of House of Refuge loan previously omitted from liability.

‖ Including $763 in payment of liability not previously reported.

STATISTICS OF ONTARIO

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

County Municipalities.	Miscellaneous.	Total disbursements.	Assets on December 31st, 1902. Cash in treasury.	Rates due from local municipalities.	Sinking Fund investments and deposits.	Other investments and special deposits.	Land, buildings, furniture, etc.
	$	$	$	$	$	$	$
1. Brant	673	20,925	11,752	.....	.....	.....	106,000
2. Bruce	2,826	72,816	7,050	4,836	.....	4,000	80,000
3. Carleton	2,531	64,290	4,445	26,557	23,951	.....	185,000
4. Dufferin	191	26,320	321	3,044	11,529	.....	40,000
5. Elgin	208	82,503	4,828	19,654	.....	.....	171,000
6. Essex	2,745	78,554	10	18,448	.....	.....	111,000
7. Frontenac	670	66,289	4,347	27,505	.....	2,000	117,000
8. Grey	1,558	44,206	.....	7,243	7,445	*33,076	87,638
9. Haldimand	432	26,383	4,352	997	.....	.....	40,000
10. Haliburton	.....	7,149	1,186	258	.....	.....	.....
11. Halton	495	15,661	3,623	3,944	.....	.....	45,000
12. Hastings	551	111,451	2	38,967	.....	.....	63,000
13. Huron	824	67,665	1,380	20,588	29,872	.....	77,000
14. Kent	1,894	113,732	654	15,117	.....	.....	180,550
15. Lambton	1,096	68,388	2,838	14,758	.....	.....	54,500
16. Lanark	2,383	60,234	6,095	.....	.....	.....	¶77,000
17. Leeds and Grenville	665	48,233	149	16,599	23,525	.....	148,000
18. Lennox and Addington	65	30,245	11,290	11,690	.....	.....	55,000
19. Lincoln	835	38,296	1,849	10,422	.....	.....	102,500
20. Middlesex	991	124,245	728	72,068	57,684	22,800	86,000
21. Norfolk	472	26,971	9,389	1,004	.....	.....	59,000
22. Northumberland & Durham	563	59,767	8,206	6,974	10,583	.....	51,000
23. Ontario	725	120,140	22,786	977	.....	.....	71,000
24. Oxford	719	44,470	49,694	.....	.....	.....	190,000
25. Peel	1,207	36,902	2,419	.....	.....	.....	78,136
26. Perth	1,009	66,755	19,599	3,070	34,991	.....	125,000
27. Peterborough	2,449	53,813	.....	10,529	10,368	.....	93,355
28. Prescott and Russell	241	24,962	.....	11,791	.....	.....	20,779
29. Prince Edward	75	14,617	282	.....	.....	.....	33,500
30. Renfrew	271	29,557	3,683	14,345	10,697	.....	50,000
31. Simcoe	1,630	92,803	1,395	30,776	.....	10,300	158,000
32. Stormont, Dundas and Glengarry	760	77,396	.....	10,496	.....	.....	61,000
33. Victoria	1,423	40,364	614	17,561	.....	.....	69,169
34. Waterloo	664	55,222	97	.....	.....	.....	89,000
35. Welland	1,171	35,950	.....	7,460	.....	.....	a139,536
36. Wellington	2,768	72,052	4,355	34,330	.....	.....	80,000
37. Wentworth	2,484	105,993	27,782	.....	.....	.....	b160,000
38. York	1,378	173,703	27,071	20,429	.....	.....	164,000
Totals 1902	41,642	2,299,022	244,271	482,437	220,645	72,176	3,518,663

* Deposited to credit of general account. ¶ Including $6,000 for House of Industry Farm.
a Including $30,000 for bridges. *b* Including $80,000 for roads.

COUNTY MUNICIPALITIES.—*Continued.*

of the County Municipalities of Ontario for the year ending December 31st, 1902.

Miscellaneous.	Total assets.	Liabilities on December 31st, 1902. School grants unpaid.	Railway debentures outstanding (principal).	All other debentures outstanding (principal).	Loans for current expenses and interest due on same.	Local municipalities for non-resident taxes.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	
.....	117,752	.....	.....	6,216	.....	.....	.....	6,216	1
2,880	98,766	340	.....	17,148	.....	.....	3,418	20,906	2
.....	239,953	.....	.....	60,000	‡6,000	.....	.....	66,000	3
606	55,500	1,200	.....	12,000	.....	191	1,131	14,522	4
13,457	208,939	.....	.....	40,897	16,000	614	9,874	67,385	5
3,194	132,652	.....	.....	45,185	15,167	13	1,726	62,091	6
4,504	155,356	32	117,000	.....	10,000	.....	2,910	129,942	7
.....	135,402	20	.....	20,000	.....	284	13	20,317	8
.....	45,349	.....	.....	.....	.....	.....	.....	.....	8
52	1,496	.....	.....	.....	.....	.....	575	575	10
.....	52,567	.....	.....	.....	.....	.....	.....	.....	11
912	102,881	2,000	.....	.....	33,055	912	4,676	40,643	12
.....	128,840	.....	.....	73,000	.....	375	.....	73,375	13
6,318	202,639	270	.....	34,861	21,647	*12,422	3,935	73,135	14
.....	72,096	1,288	.....	11,756	.....	355	123	13,522	15
4,650	87,745	.....	.....	19,300	3,000	.....	.....	22,300	16
1,200	189,473	.....	.....	58,972	9,770	150	.....	68,892	17
.....	77,980	.....	.....	67,900	.....	2	.....	67,902	18
1,204	115,975	1,843	.....	1,000	2,000	570	255	5,668	19
9,618	248,898	.....	.....	486,260	.....	158	21,901	508,319	20
.....	69,393	.....	.....	.....	.....	.....	.....	.....	21
1,091	77,854	.....	.....	20,000	.....	243	100	20,343	22
.....	94,763	.....	.....	30,255	24,134	380	.....	54,769	23
670	240,364	100	.....	99,915	.....	65	2,104	102,184	24
.....	80,555	.....	.....	.....	.....	.....	1,000	1,000	25
957	183 617	.....	120,000	80,031	.....	.....	7,798	207,829	26
**2,402	116,654	805	.....	50,392	**15,625	1,070	5,357	73,249	27
†10,840	43,410	.....	.....	7,185	17,757	.....	283	25,225	28
.....	33,782	.....	.....	.....	.....	.....	.....	.....	29
830	79,555	110	.....	26,474	2,500	618	851	30,553	30
13,783	214,254	300	.....	42,870	.....	.....	4,264	47,434	31
.....	71,496	.....	.....	22,235	13,151	264	.....	35,650	32
1,054	88,398	.....	.....	.....	17,000	216	517	17,733	33
835	89,932	.....	.....	35,003	322	.....	.....	35,325	34
1,887	148,883	.....	.....	.....	4,542	.....	17	4,559	35
2,128	120,813	3,331	.....	.....	12,000	423	11,122	26,876	36
3,841	191,623	.....	.....	16,882	68,272	.....	1,431	86,585	37
7,125	218,625	665	.....	106,655	.....	867	15,732	123,919	38
96,038	4,634,230	12,304	237,000	1,492,392	291,942	20,192	101,113	2,154,943	

‡ Omitted from returns. * Including $12,353, on account of ex-Treasurer's shortage.
** Including $1,590 due from Province for Administration of Justice. † Lemieux bridge.
** Including $9,655 due Sinking Funds.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1903.						
	Balance from 1902	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
1. Adelaide, Middlesex	6,467	10,997	40		36	200	
2. Adjala, Simcoe	636	7,720	109			162	
3. Admaston, Renfrew	1,572	5,781	41			400	
4. Adolphustown, Lennox & Addington	322	2,937			120		
5. Albemarle, Bruce	68	5,930	94			400	
6. Alberton, Rainy River	306	1,010				250	
7. Albion, Peel	758	13,532	112			4,272	
8. Aldborough, Elgin	136	24,941	650	691	123	24,322	1,928
9. Alfred, Prescott	109	8,835	255			300	
10. Algona S., Renfrew	110	1,512	21				
11. Alice and Fraser, Renfrew	8	3,563				150	
12. Alnwick, Northumberland	2	3,570	82			836	
13. Amabel, Bruce	2,022	13,160	145		13	490	
14. Amaranth, Dufferin	1,327	12,108			179	2,000	
15. Ameliasburg, Prince Edward	43	10,681	47		1,000	1,365	
16. Amherst Island, Lennox, & Addington	423	3,922	16				
17. Ancaster, Wentworth	10,245	19,632	200	8,934	1,353		
18. Anderdon, Essex	102	10,230	128			4,247	390
19. Anson and Hindon, Haliburton	46	1,027	27				
20. Armour, Parry Sound	1,265	2,133			28		
21. Arran, Bruce	2,325	11,169	73		51		
22. Artemesia, Grey	1,998	15,496	173		96	3,200	
23. Arthur, Wellington	855	12,899	86		16	1,900	
24. Ashfield, Huron	1,028	12,187	185		4	1,000	
25. Asphodel, Peterborough	209	10,094	6			1,950	
26. Assiginack, Manitoulin	647	3,170	104				
27. Athol, Prince Edward	213	3,840	4	2,020	88		
28. Atwood, Rainy River	910	4,385	460			6,342	1,800
29. Augusta, Grenville	2,026	17,512	771	205	707		
30. Bagot and Blithefield, Renfrew	1,083	3,816	105				
31. Balfour, Algoma	520	1,875	217			3,000	
32. Bangor, Wicklow & McClure, Hastings		2,089	20				
33. Barrie, Frontenac	14	2,022	20				
34. Barton, Wentworth	3,358	12,331	428	5,706	311		
35. Bastard and Burgess S., Leeds	2,169	11,498	308		1,009		
36. Bathurst, Lanark	1,106	8,628	19	780	129		
37. Bayham, Elgin	4,182	27,225	168			21,620	
38. Beckwith, Lanark	362	5,700	80		358	983	
39. Bedford, Frontenac		5,897	22			498	1,050
40. Belmont and Methuen, Peterborough	579	6,670					
41. Bentinck, Grey	1,658	9,609	59		40		
42. Bertie, Welland	2,247	16,109	545			809	
43. Beverly, Wentworth		17,260	38	5,989	620		
44. Bexley, Victoria	273	3,583	56		113		
45. Biddulph, Middlesex	4,339	11,562	172			3,000	
46. Billings, Manitoulin	124	1,294	20				
47. Binbrook, Wentworth	1,589	7,476					
48. Blandford, Oxford	4,569	8,356	200		89		
49. Blanshard, Perth	3,397	15,560				6,352	
50. Blenheim, Oxford	1,116	21,917	855	133		3,000	1,340
51. Blind River, Algoma	1,111	5,023	672				
52. Bonfield, Nipissing	108	3,961	384			500	

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Disbursements, 1903.												
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, etc.	Charities.	County levy.	Payment on account of schools and education	Drainage work.	Sinking Fund and other investments and deposits.	No.
35	17,775	685	168	2,576	.....	29	4,214	3,882	27	.....	1
71	8,698	749	182	1,609	.....	87	.....	3,444	.....	.....	2
*3,861	11,655	440	157	749	.....	50	1,155	3,464	.....	.....	3
.....	3,379	179	52	230	.....	124	1,105	1,143	.....	.....	4
11	6,503	485	198	1,191	.....	24	345	2,334	.....	.....	5
11	1,577	173	49	482	.....	5	.....	448	.....	.....	6
230	18,904	696	1,302	3,390	.....	9	2,308	5,652	.....	.....	7
240	53,031	1,080	1,876	7,595	.....	51	4,872	9,429	7,502	1,643	8
59	9,558	444	132	1,737	.....	10	1,208	3,612	.....	.....	9
.....	1,643	174	87	18	.....	.....	201	897	.....	.....	10
40	3,761	213	83	381	.....	11	437	2,240	.....	.....	11
103	4,593	422	94	743	.....	19	572	1,448	.....	25	12
718	16,548	893	186	1,635	110	22	3,439	5,466	.....	.....	13
239	15,853	519	408	2,275	.....	56	2,275	6,073	577	.....	14
64	13,200	649	204	1,355	.....	675	2,040	5,313	31	1,491	15
.....	4,361	204	101	224	.....	217	1,824	1,185	.....	.....	16
121	40,485	1,140	842	4,091	.....	380	6,454	8,540	.....	7,305	17
123	15,220	588	439	2,676	.....	309	1,110	3,336	833	.....	18
29	1,129	154	48	57	19	.....	105	621	.....	.....	19
66	3,492	322	111	310	.....	5	.....	1,401	.....	.....	20
280	13,898	690	262	1,932	.....	49	2,259	4,933	.....	.....	21
115	21,078	914	1,089	3,807	.....	237	2,249	7,237	.....	569	22
884	16,640	860	133	2,128	.....	5	3,755	5,756	152	.....	23
66	14,470	802	277	3,979	225	10	2,199	4,896	19	.....	24
6	12,265	461	113	2,251	.....	113	2,536	4,078	.....	254	25
.....	3,921	289	92	624	.....	60	.....	2,109	.....	.....	26
100	6,265	174	83	195	.....	250	871	2,493	.....	2,020	27
32	13,929	767	279	3,972	10	.....	.....	1,100	.....	.....	28
31	21,252	961	304	5,287	658	36	2,861	7,434	168	639	29
.....	5,004	322	124	398	.....	35	396	2,087	.....	.....	30
147	5,759	373	53	480	.....	13	.....	1,312	.....	.....	31
285	2,394	324	78	279	.....	20	228	1,271	.....	.....	32
7	2,063	110	41	76	.....	49	267	1,205	.....	47	33
37	22,171	1,269	1,006	2,696	.....	75	3,408	4,829	.....	5,694	34
24	15,008	667	158	1,464	.....	98	2,076	5,660	.....	1,746	35
67	10,729	600	149	586	.....	8	2,678	4,517	91	.....	36
142	53,337	1,042	638	6,521	.....	111	5,767	6,819	281	.....	37
25	8,508	425	121	816	40	5	2,009	3,356	.....	681	38
224	7,691	357	312	996	.....	79	866	3,508	.....	.....	39
427	7,676	536	241	1,079	306	96	813	3,379	.....	.....	40
290	11,656	544	156	2,491	293	84	2,573	5,064	.....	.....	41
85	19,795	730	385	5,927	.....	11	4,063	5,557	954	.....	42
†2,154	26,061	1,079	376	2,396	.....	372	7,454	7,165	.....	5,988	43
512	4,537	285	116	294	.....	12	506	2,190	.....	643	44
270	19,343	721	195	6,831	.....	86	2,137	3,849	.....	.....	45
3	1,441	192	53	118	250	32	.....	615	.....	.....	46
5	9,070	365	322	917	.....	21	2,519	2,604	.....	.....	47
93	13,307	565	127	2,576	200	10	1,966	2,902	2,018	.....	48
645	25,954	849	626	6,353	.....	13	3,945	4,882	.....	.....	49
228	28,589	900	364	6,005	.....	151	5,089	9,220	1,661	.....	50
279	7,085	631	321	2,244	.....	5	.....	1,200	.....	200	51
54	5,007	555	108	896	.....	14	.....	2,397	.....	.....	52

*Including $3,750 from Dominion Government on account of C.P.R. stock loaned
†Including $2,000 from County for Township's share of stone road

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
1. Adelaide	266	200	29	94	12,170	5,605	41
2. Adjala		162			6,233	2,465	1,341
3. Admaston		600	6	33	6,654	5,001	1,839
4. Adolphustown		130		13	2,976	403	
5. Albemarle		715	91	571	5,954	549	3,640
6. Alberton		250	5	13	1,425	152	490
7. Albion	105	4,272	197	81	18,012	892	
8. Aldborough	2,111	13,096	2,241	856	52,352	679	26,218
9. Alfred	118	1,475	36	650	9,422	136	4,856
10. Algona S	145		26	22	1,570	73	702
11. Alice and Fraser		150	5	213	3,733	28	1,255
12. Alnwick		836	22	68	4,249	344	135
13. Amabel	952	640	909	389	14,641	1,907	1,446
14. Amaranth	1,235	2,000	236	29	15,683	170	2,281
15. Ameliasburg	495		848	99	13,200		1,492
16. Amherst Island		100	1	77	3,933	428	1,020
17. Ancaster		5,050		1,007	34,809	5,676	3,687
18. Anderdon	803	3,000	369	*1,757	15,220		8,958
19. Anson and Hindon	50		4		1,058	71	602
20. Armour				93	2,242	1,250	2,354
21. Arran	119		75	133	10,452	3,446	232
22. Artemesia		3,200	447	175	19,924	1,154	144
23. Arthur	529	1,900	105	95	15,418	1,222	1
24. Ashfield	534	1,000	76	192	14,209	261	6,339
25. Asphodel		1,750	281	402	12,239	26	302
26. Assiginack				36	3,210	711	51
27. Athol				2	6,088	177	236
28. Atwood	224	6,700	113	717	13,882	47	1,078
29. Augusta		150	250	89	18,867	2,385	3,061
30. Bagot and Blithefield				10	3,372	1,632	467
31. Balfour		3,086	50	90	5,457	302	2,265
32. Bangor, Wicklow & McClure		23		12	2,235	159	2,605
33. Barrie	59		11	97	1,962	101	300
34. Barton	1,000		220	794	20,991	1,180	4,161
35. Bastard and Burgess S			1,150	74	13,093	1,915	300
36. Bathurst				113	8,742	1,987	265
37. Bayham	2,027	27,736	1,864	531	53,337		5,272
38. Beckwith		983	17	8	8,481	27	14
39. Bedford	310	508	96	652	7,684	7	1,467
40. Belmont and Methuen	213		153	359	7,175	501	2,046
41. Bentinck	89		72	189	11,555	101	3,562
42. Bertie	680	725	202	561	19,795		3,401
43. Beverly		271		666	25,767	294	4,212
44. Bexley			375	68	4,389	148	1,666
45. Biddulph	180	2,000	61	64	16,094	3,249	457
46. Billings				96	1,356	85	1,069
47. Binbrook	116		39	1,037	7,940	1,130	306
48. Blandford	699		242	121	11,421	1,886	90
49. Blanshard		6,352	152	203	23,375	2,579	355
50. Blenheim	705	3,000	433	367	27,895	694	23
51. Blind River			72	463	5,197	1,888	823
52. Bonfield		700	43	88	4,401	606	2,821

*Including $1,548 Board of Health expenses, mostly owing to small-pox visitation.

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	2,044	7,690	4,210	279	.....	.....	4,489	1
.....	.....	3,806	2,521	.....	.....	161	2,682	2
.....	705	7,545	1,405	.....	400	186	1,991	3
3,000	430	3,833	.....	.....	.....	.....	.....	4
.....	3,356	7,545	1,353	875	409	647	3,284	5
.....	.....	642	9	.....	.....	35	44	6
.....	3,567	4,489	.....	2,597	.....	115	2,712	7
8,586	30,154	65,637	4,176	39,703	28,135	1,924	73,938	8
.....	618	5,610	3,533	118	300	172	4,123	9
.....	659	1,434	321	309	.....	69	699	10
.....	57	1,340	709	.....	.....	517	1,226	11
25	860	1,364	.....	.....	.....	.....	.....	12
.....	2,203	5,556	.....	20,164	.....	.....	20,164	13
.....	1,200	3,651	.....	4,189	.....	734	4,923	14
36,377	6,547	44,416	.....	15,527	1,365	145	17,037	15
.....	225	1,673	281	.....	529	119	929	16
26,154	4,904	40,421	.....	.....	.....	.....	.....	17
.....	2,168	11,126	4,622	5,934	3,830	553	14,939	18
.....	467	1,140	1,023	.....	.....	193	1,216	19
.....	235	3,839	1,752	.....	.....	1,092	2,844	20
.....	2,226	5,904	.....	1,381	.....	46	1,427	21
4,651	9,210	15,159	180	8,400	.....	63	8,643	22
.....	1,215	2,438	.....	896	.....	.....	896	23
.....	1,093	7,693	4,192	768	.....	160	5,120	24
3,166	1,700	5,194	.....	3,166	200	1,369	4,735	25
.....	650	1,412	.....	.....	.....	.....	.....	26
2,020	1,250	3,683	.....	.....	.....	.....	.....	27
.....	4,062	5,187	920	1,576	1,342	62	3,900	28
17,995	3,000	26,441	2,981	3,200	2,850	130	9,161	29
.....	1,000	3,099	503	.....	.....	162	665	30
.....	535	3,102	238	.....	500	186	924	31
.....	1,240	4,004	1,670	1,040	.....	325	3,035	32
47	300	748	146	173	.....	58	377	33
16,151	5,186	26,678	317	5,000	.....	640	5,957	34
33,080	.....	35,295	.....	23,000	.....	300	23,300	35
.....	750	3,002	.....	.....	.....	.....	.....	36
.....	2,009	7,281	892	28,056	1,884	648	31,480	37
9,170	1,340	10,551	.....	.....	.....	.....	.....	38
.....	500	1,974	1,855	1,808	.....	53	3,716	39
.....	3,204	5,751	1,485	2,604	.....	98	4,187	40
.....	1,422	5 085	497	1,422	.....	.....	1,919	41
.....	8,288	11,689	1,087	3,071	84	738	4,980	42
13,779	3,500	21,785	.....	.....	.....	.....	.....	43
3,937	555	6,306	455	7,500	.....	50	8,005	44
.....	1,160	4,866	2,279	360	1,000	90	3,729	45
.....	250	1,404	445	.....	.....	10	455	46
.....	1,124	2,560	.....	674	.....	.....	674	47
.....	260	2,236	.....	4,902	.....	.....	4,902	48
.....	1,174	4,108	5,137	.....	.....	105	5,242	49
.....	7,094	7,811	.....	7,967	.....	.....	7,967	50
522	4,478	7,711	1,400	5,000	1,093	802	8,295	51
.....	.....	3,427	1,687	.....	513	508	2,708	52

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1903.						
	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
53. Bosanquet, Lambton	517	16,193	43		4	2,800	809
54. Brant, Bruce	425	15,834	200	2,000	167		
55. Brantford, Brant	7,252	25,148	111	4,100	3,610		
56. Brighton, Northumberland	1,898	9,430				100	
57. Brock, Ontario	1,004	16,932	82			4,000	
58. Bromley, Renfrew	759	4,202	87			200	
59. Brooke, Lambton	7,861	29,939	30		200	1,972	2,893
60. Brougham, Renfrew	188	843	42				
61. Bruce, Bruce	1,720	13,603	86	1,620	41	2,350	
62. Brudenell and Lynedoch, Renfrew	246	2,585	67				
63. Brunel, Muskoka	107	2,367	7				200
64. Bucke, Nipissing	215	1,370	243			700	
65. Burford, Brant	2,949	20,547	21		120		
66. Burgess N., Lanark	82	2,906					
67. Burleigh and Anstruther, Peterboro'	216	2,225	51			400	
68. Burpee, Manitoulin	52	711		12			
69. Caistor, Lincoln	1,244	6,145	6			200	
70. Caldwell, Nipissing	507	2,203	101			500	
71. Caledon, Peel	187	17,887	318		13	3,500	
72. Caledonia, Prescott	106	7,948	69			400	
73. Calvin, Nipissing	209	1,261				211	
74. Cambridge, Russell	1,268	11,965	182			3,269	
75. Camden, Kent	34	15,721	46		52	2,837	5,592
76. Camden E., Lennox and Addington	437	22,872	215		22	4,194	
77. Cameron, Nipissing	86	579				77	
78. Canborough, Haldimand	96	4,209	6			1,300	
79. Caradoc, Middlesex	7,994	20,766	72				3,466
80. Carden, Victoria	43	2,677				600	
81. Cardiff, Haliburton	395	1,763					
82. Cardwell, Muskoka	1,214	1,280	1				
83. Carling, Parry Sound	874	1,344				1,044	
84. Carlow, Hastings	572	1,969				100	
85. Carnarvon, Manitoulin	80	2,060	20		15		
86. Carrick, Bruce	1,279	15,860	304		196	197	
87. Cartwright, Durham	33	8,418	86			1,700	
88. Cavan, Durham	1,121	14,411	191				
89. Cayuga N., Haldimand	370	6,402	98		6		
90. Cayuga, S., Haldimand	349	2,857	1				
91. Chaffey, Muskoka	176	3,117	40				
92. Chandos, Peterborough	530	2,213					
93. Chapleau, Algoma	201	2,052	326			240	
94. Chapman, Parry Sound	919	1,656	34				
95. Chapple, Rainy River	27	2,223	58			311	
96. Charlottenburg, Glengarry		23,849	592			3,782	720
97. Charlotteville, Norfolk	325	12,365	65		452	2,384	
98. Chatham, Kent	1,021	46,020	84			24,664	32,238
99. Chinguacousy, Peel		19,822	172	4,342	1,571		
100. Christie, Parry Sound	432	1,772	83			60	
101. Clarence, Russell	1,980	14,750	233			6,000	550
102. Clarendon and Miller, Frontenac	125	2,171	8				
103. Clarke, Durham	112	16,677	194				
104. Clinton, Lincoln	410	12,303				2,918	

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Disbursements, 1903.

Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
21	20,387	898	274	3,305	.....	112	2,746	6,704	1,250	.....	53
222	18,848	781	359	2,084	.....	130	3,483	6,669	.....	3,607	54
540	40,761	2,218	777	6,289	.....	1,080	4,126	13,939	77	4,100	55
233	11,661	526	106	1,590	.....	88	1,882	5,076	.....	.....	56
49	22,067	1,103	568	4,335	.....	220	3,909	6,419	.....	.....	57
27	5,275	351	155	353	18	.....	495	2,591	541	.....	58
294	43,189	890	1,007	10,812	.....	57	3,337	8,375	3,425	.....	59
18	1,091	181	53	120	.....	15	110	349	.....	.....	60
444	19,864	759	329	4,796	.....	21	2,654	5,350	77	.....	61
44	2,942	404	76	263	.....	20	138	1,535	.....	.....	62
2	2,683	226	39	574	.....	5	.....	1,536	.....	.....	63
92	2,620	287	95	1,129	.....	15	.....	100	.....	.....	64
67	23,704	942	366	5,201	331	615	3,300	8,726	604	71	65
.....	2,988	273	58	.....	51	.....	752	1,550	88	.....	66
274	3,166	300	74	125	.....	.....	100	1,030	.....	.....	67
.....	775	78	31	53	.....	.....	.....	306	.....	.....	68
70	7,665	329	106	471	.....	.....	1,666	2,979	.....	.....	69
22	3,333	271	96	741	.....	.....	.....	932	153	.....	70
30	21,935	990	322	4,247	.....	232	2,805	8,111	.....	.....	71
207	8,730	545	1,387	775	.....	.....	1,088	3,676	519	.....	72
.....	1,681	207	34	23	.....	.....	.....	696	10	.....	73
122	16,806	787	170	2,436	.....	43	1,170	4,338	295	50	74
213	24,495	916	473	2,372	250	502	1,720	6,032	6,032	.....	75
70	27,810	884	339	2,684	1,300	298	5,670	8,469	.....	.....	76
.....	742	187	25	56	.....	.....	.....	392	.....	.....	77
.....	5,611	315	82	1,923	.....	134	1,259	1,606	.....	.....	78
214	32,512	1,006	414	5,907	.....	15	4,918	9,094	710	.....	79
145	3,465	177	47	430	.....	18	262	1,513	.....	20	80
70	2,228	263	55	170	7	5	211	1,066	.....	.....	81
395	2,890	246	54	287	.....	35	.....	704	.....	.....	82
28	3,290	108	37	19	.....	.....	.....	1,673	.....	.....	83
251	2,892	145	64	567	.....	12	185	1,331	.....	.....	84
.....	2,175	165	65	376	.....	.....	.....	809	.....	.....	85
98	17,934	694	266	1,428	39	89	3,151	9,545	.....	440	86
20	10,257	425	918	610	.....	83	1,532	3,668	.....	.....	87
222	15,945	693	244	5,110	.....	25	2,774	5,790	.....	.....	88
238	7,114	371	170	754	22	12	2,069	3,261	.....	.....	89
.....	3,207	97	41	66	.....	101	1,000	1,311	.....	.....	90
24	3,357	348	66	853	.....	61	.....	1,319	.....	.....	91
3	2,746	324	58	131	44	45	195	1,400	.....	.....	92
.....	2,819	142	66	345	35	23	.....	1,430	.....	110	93
7	2,616	199	85	201	.....	48	.....	1,110	.....	.....	94
57	2,676	256	55	387	.....	.....	.....	1,242	.....	.....	95
188	29,131	1,349	331	5,280	.....	115	2,888	14,196	18	.....	96
.....	15,591	654	368	2,212	56	185	1,995	5,451	228	.....	97
476	104,503	2,283	1,263	15,383	25	1,004	4,912	16,565	13,272	1,408	98
351	26,258	1,203	281	4,792	.....	55	5,670	8,946	.....	1,405	99
321	2,668	257	104	154	143	98	.....	598	.....	.....	100
253	23,766	1,486	140	3,065	.....	11	1,836	7,740	972	.....	101
28	2,332	178	68	87	.....	.....	287	1,405	.....	.....	102
80	17,063	956	398	2,604	.....	364	3,649	7,494	.....	.....	103
248	15,879	776	206	2,897	.....	26	4,203	3,943	165	.....	104

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures Redeemed.	Current loans repaid.	Interest on loans advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
53. Bosanquet	1,516	2,800	321	347	20,273	114	83
54. Brant	220	.....	149	341	17,823	1,025	1,966
55. Brantford	1,041	.....	638	906	35,191	5,570	2,344
56. Brighton	.....	100	.....	244	9,612	2,049	16
57. Brock	127	4,000	170	365	21,216	851	54
58. Bromley	.....	600	14	83	5,201	74	2,040
59. Brooke	9,256	1,972	1,555	496	41,182	2,007	11,702
60. Brougham	.....	112	.....	9	949	142	455
61. Bruce	1,980	2,350	365	186	18,867	997	.....
62. Brudenell and Lynedoch	.....	.....	.....	51	2,487	455	860
63. Brunel	.....	.....	.....	46	2,426	257	740
64. Bucke	.....	700	18	51	2,395	225	412
65. Burford	974	.....	129	416	21,675	2,029	.....
66. Burgess N	.....	.....	.....	.....	2,772	216	217
67. Burleigh and Anstruther	256	400	76	476	2,837	329	229
68. Burpee	135	.....	85	12	700	75	722
69. Caistor	.....	200	4	84	5,839	1,826	945
70. Caldwell	82	314	22	62	2,673	660	1,236
71. Caledon	.....	3,500	63	317	20,587	1,348	316
72. Caledonia	250	.....	180	172	8,592	138	4,462
73. Calvin	100	500	23	7	1,600	81	833
74. Cambridge	1,549	4,194	724	832	16,588	218	2,499
75. Camden	3,815	947	660	776	24,495	.....	9,354
76. Camden East	.....	4,194	106	*2,730	26,674	1,136	598
77. Cameron	.....	77	3	.....	740	2	245
78. Canborough	.....	.....	.....	88	5,407	204	1,328
79. Caradoc	1,726	.....	432	587	24,809	7,703	1,852
80. Carden	50	829	54	57	3,463	2	541
81. Cardiff	77	.....	30	24	1,908	320	1,078
82. Cardwell	.....	.....	.....	29	1,355	1,535	875
83. Carling	46	1,300	52	.....	3,235	55	1,810
84. Carlow	50	276	12	3	2,645	247	1,917
85. Carnarvon	224	.....	74	1	1,714	461	1,254
86. Carrick	.....	197	366	147	16,362	1,572	.....
87. Cartwright	357	1,960	85	147	9,785	472	1,027
88. Cavan	.....	.....	21	522	15,179	766	589
89. Cayuga N	.....	.....	.....	68	6,727	387	157
90. Cayuga S	.....	.....	.....	2	2,618	589	247
91. Chaffey	285	.....	33	172	3,137	220	3,606
92. Chandos	.....	.....	.....	138	2,335	411	1,300
93. Chapleau	140	240	266	17	2,814	5	250
94. Chapman	.....	.....	.....	35	1,678	938	961
95. Chapple	123	311	44	71	2,489	187	428
96. Charlottenburg	1,201	2,296	692	765	29,131	.....	5,532
97. Charlotteville	1,561	2,244	424	213	15,591	.....	770
98. Chatham	11,810	29,927	4,127	†1,513	103,492	1,011	37,204
99. Chinguacousy	210	143	245	244	26,258	.....	317
100. Christie	100	.....	24	74	1,852	816	1,520
101. Clarence	208	4,000	263	1,145	20,866	2,900	3,121
102. Clarendon and Miller	.....	60	4	14	2,104	228	1,521
103. Clarke	584	.....	68	263	16,380	683	2,707
104. Clinton	86	2,918	186	294	15,700	179	.....

*Including $2,484 Board of Health expenses. †Including $893 paid to other municipalities for share of debt.

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities	No.
$	$	$	$	$	$	$	$	
.....	6,531	6,728	.....	5,557	.....	242	5,799	53
8,196	3,513	14,700	.....	3,513	.....	721	4,234	54
68,742	10,761	87,417	1,122	11,792	.....	3,610	16,524	55
.....	700	2,765	.....	.....	.....	.....	.....	56
.....	3,023	3,928	81	946	.....	174	1,201	57
.....	700	2,814	1,120	.....	.....	.....	1,120	58
.....	3,742	17,451	.....	27,505	.....	.....	27,505	59
.....	.....	597	170	.....	106	19	295	60
696	5,400	7,093	.....	4,150	.....	340	4,490	61
.....	650	1,965	718	.....	.....	.....	718	62
.....	963	1,960	595	200	.....	19	814	63
.....	396	1,033	350	.....	.....	180	530	64
2,432	550	5,011	.....	936	.....	1,216	2,152	65
.....	600	1,033	14	.....	.....	78	92	66
.....	866	1,424	259	978	.....	.....	1,237	67
.....	.....	797	230	1,565	.....	22	1,817	68
.....	1,000	3,771	1,764	.....	.....	.....	1,764	69
.....	367	2,263	1,027	367	510	110	2,014	70
.....	2,000	3,664	.....	.....	.....	.....	.....	71
.....	1,248	5,848	2,096	585	1,000	.....	3,681	72
.....	100	1,014	447	100	11	27	585	73
50	1,787	4,554	1,025	11,296	.....	.....	12,321	74
.....	4,701	14,055	.....	18,572	2,837	2,593	24,002	75
.....	2,455	4,189	.....	355	.....	218	573	76
.....	.....	247	.....	.....	.....	90	90	77
.....	.....	1,532	.....	.....	1,333	.....	1,333	78
.....	6,880	16,435	4,914	8,207	.....	.....	13,121	79
20	450	1,013	419	450	.....	148	1,017	80
.....	511	1,909	409	452	.....	70	931	81
.....	.....	2,410	767	.....	.....	295	1,062	82
.....	629	2,494	799	554	344	48	1,745	83
.....	230	2,394	1,412	160	105	318	1,995	84
.....	.....	1,715	1,054	895	.....	87	2,036	85
4,980	4,950	11,502	.....	7,200	.....	.....	7,200	86
.....	2,492	3,991	.....	4,849	1,189	.....	6,038	87
.....	6,535	7,890	.....	.....	.....	1,084	1,084	88
.....	108	652	.....	.....	.....	115	115	89
.....	1,200	2,036	.....	.....	.....	.....	.....	90
.....	381	4,207	208	381	.....	.....	589	91
.....	.....	1,711	1,027	.....	.....	466	1,493	92
110	4,224	4,589	.....	4,224	.....	230	4,454	93
.....	263	2,162	1,095	.....	.....	214	1,309	94
.....	.....	615	.....	577	.....	13	590	95
.....	9,313	14,845	.....	12,374	2,195	.....	14,569	96
8,764	640	10,174	.....	6,003	140	.....	6,143	97
1,408	24,256	63,879	6,594	85,244	24,664	.....	116,502	98
32,781	1,910	35,008	.....	910	1,653	.....	2,563	99
.....	1,270	3,606	500	300	60	167	1,027	100
.....	1,646	7,667	5,471	2,274	2,000	.....	9,745	101
.....	135	1,884	41	.....	131	45	217	102
.....	6,350	9,740	.....	776	.....	95	871	103
.....	3,232	3,411	.....	2,614	.....	12	2,626	104

Township Municipalities and County in which located.	Receipts, 1903. Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
105. Cockburn Island, Manitoulin	154	1,017					
106. Colborne, Huron	98	9,079	55			1,000	
107. Colchester N., Essex	1,334	14,298	4		216		8,573
108. Colchester S., Essex	1,825	14,600	315		128	4,000	6,903
109. Collingwood, Grey	1,443	16,277	34			3,903	
110. Cornwall, Stormont	2,695	19,987	319				379
111. Cramahe, Northumberland		11,184	40				
112. Crosby N., Leeds		8,597	214		203	1,000	
113. Crosby S., Leeds	1,677	6,505	117		204		1,200
114. Crowland, Welland	898	4,925	33			300	
115. Culross, Bruce	1,187	11,500	98		14	200	
116. Cumberland, Russell	1,650	14,683	168			2,000	1,606
117. Dalhousie and Sherbrooke N., Lanark	970	5,063	30			1,551	2,000
118. Dalton, Victoria	338	2,000					
119. Darling, Lanark	120	1,990			14		
120. Darlington, Durham	2,697	18,964	6		29		
121. Dawn, Lambton	688	20,262	42				16,643
122. Delaware, Middlesex	543	8,267	33		28	1,450	
123. Denbigh, Ab. & Ash, Lennox and Ad.	246	2,003					
124. Derby, Grey	478	10,817	23			3,398	800
125. Dereham, Oxford		27,165	891		310		11,711
126. Dorchester N., Middlesex	5,233	17,363	80		352	1,974	
127. Dorchester S., Elgin	897	11,296	20				
128. Douro, Peterborough	438	8,061				3,194	
129. Dover, Kent	2,273	23,660	419		1,098		3,130
130. Downie, Perth	3,143	19,424	129		36	5,525	
131. Draper, Muskoka	288	2,659	52				850
132. Drummond, Lanark	719	9,018	127				
133. Drury, Denison and Graham, Algoma		6,520	120		5	400	
134. Dumfries N., Waterloo	69	10,653	115			1,700	
135. Dumfries S., Brant	2,831	15,879	87		24	1,500	
136. Dummer, Peterborough	306	6,800			35	500	
137. Dungannon, Hastings	389	2,046	10				300
138. Dunn, Haldimand	628	3,517	44		5		
139. Dunwich, Elgin	5,145	28,622	56			12,100	
140. Dymond, Nipissing	92	1,914	41			400	
141. Dysart, Guilford, etc., Haliburton	831	5,178	53			600	
142. Easthope N., Perth	6,181	16,701	32		45	2,000	
143. Easthope S., Perth		10,419	239		6	2,033	
144. Eastnor, Bruce	80	11,876	384	2,287	49	5,633	700
145. Edwardsburg, Grenville		14,844	70		733		
146. Egremont, Grey	2,978	12,666	31		42	1,100	981
147. Ekfrid, Middlesex	1,192	18,291	69				1,144
148. Elderslie, Bruce	875	11,126	4		16	1,582	
149. Eldon, Victoria	2,148	13,562	197	11,863	324	3,000	2,000
150. Elizabethtown, Leeds	333	22,765	376		181	6,077	
151. Elma, Perth	2,970	21,293	65		14	8,000	800
152. Elma, Perth	11,571	23,777	80		198	2,000	1,840
153. Elmsley N., Lanark	559	4,165	5				
154. Elmsley S., Leeds	59	3,591	69			434	
155. Elzevir and Grimsthorpe, Hastings		3,752	43			920	
156. Emily, Victoria	215	11,901	50			2,000	

TOWNSHIP MUNICIPALITIES, 1903.

ASSETS AND LIABILITIES, 1903.

Disbursements, 1903.											
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
29	1,200	155	3	50	500	2	.....	350	.....	.....	105
45	10,277	562	210	1,725	.....	33	1,480	3,960	.....	.....	106
249	24,674	856	965	2,963	.....	202	1,593	3,092	7,384	.....	107
37	27,808	1,140	392	4,247	21	138	1,899	5,683	4,804	.....	108
111	21,768	952	1,535	3,589	30	297	2,660	6,924	.....	.....	109
.....	23,380	853	709	2,078	.....	367	1,425	8,310	1,103	.....	110
91	11,315	586	223	1,574	.....	226	1,740	5,408	.....	.....	111
3	10,017	490	76	610	.....	25	792	3,737	.....	971	112
.....	9,703	415	53	644	33	15	915	5,075	.....	283	113
105	6,261	251	155	1,029	.....	2	1,707	2,339	.....	.....	114
27	13,026	639	297	1,589	.....	9	2,492	5,989	97	.....	115
*2,947	23,054	1,244	367	4,784	407	149	1,681	5,763	4,638	.....	116
18	9,632	366	272	2,476	.....	.....	828	3,024	.....	.....	117
79	2,417	182	42	490	.....	5	109	1,030	.....	.....	118
367	2,491	284	276	183	.....	14	193	1,367	.....	.....	119
206	21,902	731	383	3,609	100	462	4,405	9,461	.....	.....	120
†3,537	41,172	997	1,157	5,305	.....	305	1,925	8,687	8,404	.....	121
117	10,438	439	310	2,964	.....	75	2,231	2,792	.....	.....	122
10	2,259	233	38	181	.....	62	155	1,443	.....	.....	123
49	15,565	659	240	3,296	.....	242	1,400	4,286	177	.....	124
1,076	41,153	1,354	586	5,364	.....	60	4,945	7,554	3,805	.....	125
439	25,441	940	374	6,574	.....	106	4,686	6,701	1,308	.....	126
189	12,402	743	335	3,983	.....	.....	2,357	3,660	739	.....	127
10	11,703	500	321	1,628	.....	82	2,364	3,267	1,086	.....	128
1,126	31,706	1,288	634	1,509	35	1,115	3,410	7,670	2,500	.....	129
442	28,699	792	169	10,009	.....	82	3,992	5,049	125	.....	130
1,238	5,087	286	37	1,983	.....	.....	.....	2,199	.....	.....	131
9	9,873	451	214	973	.....	5	3,015	3,717	.....	.....	132
250	7,295	543	299	829	.....	.....	.....	950	.....	95	133
2	12,539	718	159	1,132	.....	.....	2,880	4,689	.....	.....	134
142	20,463	968	204	4,290	.....	309	2,672	6,643	42	.....	135
62	7,703	472	101	862	.....	140	1,642	2,526	.....	.....	136
212	2,957	200	72	299	.....	.....	152	1,954	.....	.....	137
.....	4,194	218	41	374	57	152	1,192	1,775	.....	.....	138
‡1,489	47,412	1,690	417	5,713	.....	69	5,026	5,325	2,648	.....	139
.....	2,447	266	214	469	.....	10	.....	1,039	.....	.....	140
429	7,091	403	198	1,224	.....	224	1,150	1,903	.....	.....	141
499	25,458	717	219	4,469	.....	213	3,405	4,118	1,350	.....	142
347	13,044	596	391	2,571	.....	9	2,044	3,539	471	.....	143
122	21,131	464	646	900	234	47	157	4,987	6,019	273	144
22	15,669	662	287	1,283	.....	52	2,609	8,858	167	.....	145
512	18,310	610	954	3,952	.....	87	2,800	6,828	.....	.....	146
211	20,907	823	441	4,276	.....	90	4,610	5,061	1,405	.....	147
170	13,773	690	233	2,421	225	43	2,392	4,562	.....	.....	148
385	33,479	1,062	398	3,895	125	362	3,236	6,499	.....	2,972	149
6	29,738	1,059	956	6,835	.....	48	2,928	8,325	.....	466	150
402	32,644	1,152	397	6,089	.....	15	3,480	6,507	511	.....	151
1,053	40,519	895	537	5,316	.....	105	4,738	8,453	8,273	.....	152
1	4,730	310	53	265	42	.....	1,139	1,842	355	.....	153
5	4,158	324	52	1,047	123	16	738	1,854	.....	.....	154
385	5,100	506	35	496	.....	82	1,258	2,100	.....	.....	155
54	14,220	719	163	2,195	.....	357	2,590	4,694	.....	.....	156

*Including $1,000 from Provincial Government grant in aid of drainage; and $1,795 from other municipalities as share of debt. †Including $3,289 from other municipalities as share of debt. ‡Including $1,373 from Ontario Government *re* drainage account.

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
105. Cockburn Island	.....	.....	.....	1	1,061	139	1,326
106. Colborne	.....	1,400	.....	191	9,561	716	1,653
107. Colchester N.	4,502	.....	1,312	942	23,811	863	15,094
108. Colchester S	2,274	1,530	932	406	23,466	4,342	12,860
109. Collingwood	123	3,903	175	312	20,500	1,268	284
110. Cornwall	1,035	.....	1,060	1,254	18,194	5,186	3,112
111. Cramahe	.....	538	16	532	10,843	472	1,810
112. Crosby N	197	1,011	1,171	55	9,135	882	1,898
113. Crosby S	43	.....	249	112	7,837	1,866	.....
114. Crowland	.....	300	6	88	5,877	384	1,474
115. Culross	85	200	47	71	11,515	1,511	268
116. Cumberland	987	.....	635	125	20,780	2,274	14,293
117. Dalhousie & Sherbrooke N.	.....	1,551	29	82	8,628	1,004	191
118. Dalton	.....	.....	.....	22	1,880	537	13
119. Darling	.....	50	1	17	2,385	106	.....
120. Darlington	143	.....	43	278	19,615	2,287	570
121. Dawn	4,923	.....	892	1,195	33,790	7,382	19,270
122. Delaware	195	.....	72	120	9,198	1,240	3,835
123. Denbigh, Ab. and Ash	.....	.....	.....	24	2,136	123	1,543
124. Derby	140	3,398	78	177	14,093	1,472	.....
125. Dereham	3,928	2,950	1,199	155	31,900	9,253	56
126. Dorchester N	.....	1,974	26	684	23,373	2,068	4,256
127. Dorchester S	.....	126	53	203	12,199	203	280
128. Douro	126	1,494	44	162	11,074	629	298
129. Dover	8,492	.....	1,942	306	28,901	2,805	15,360
130. Downie	1,077	5,525	397	241	27,458	1,241	75
131. Draper	90	.....	14	44	4,653	434	2,173
132. Drummond	180	775	48	40	9,418	455	64
133. Drury, Denison and Graham	.....	2,236	106	150	5,208	2,087	.....
134. Dumfries N	.....	1,800	31	920	12,329	210	1,056
135. Dumfries S	290	1,500	342	219	17,479	2,984	33
136. Dummer	90	500	24	195	6,552	1,151	519
137. Dungannon	51	.....	9	.....	2,737	220	270
138. Dunn	.....	.....	.....	38	3,847	347	11
139. Dunwich	2,882	16,181	681	320	40,952	6,460	3,052
140. Dymond	120	.....	86	157	2,361	86	969
141. Dysart, Guilford, etc	113	600	27	97	5,939	1,152	1,174
142. Easthope N	2,559	2,000	325	872	20,247	5,211	60
143. Easthope S	.....	2,539	67	749	12,976	68	300
144. Eastnor	1,161	2,336	1,077	228	18,529	2,602	1,915
145. Edwardsburg	.....	714	100	97	14,829	840	4,326
146. Egremont	230	1,100	65	153	16,779	1,531	.....
147. Ekfrid	2,148	.....	314	483	19,651	1,256	8,403
148. Elderslie	157	1,582	152	120	12,577	1,196	3
149. Eldon	10,146	3,000	729	781	33,205	274	42
150. Elizabethtown	.....	6,077	425	863	27,982	1,756	2,687
151. Ellice	4,792	8,000	1,354	159	32,456	188	1,509
152. Elma	3,832	2,000	1,963	280	36,392	4,127	173
153. Elmsley N	.....	.....	11	79	4,096	634	80
154. Elmsley S	.....	.....	1	3	4,158	.....	332
155. Elzevir and Grimsthorpe	191	.....	416	16	5,100	5,100	1,972
156. Emily	282	2,000	141	173	13,314	906	.....

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					No.
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
$	$	$	$	$	$	$	$	
.....	735	2,200	275	.....	.....	69	344	105
.....	1,600	3,969	1,793	.....	.....	100	1,893	106
.....	10,722	26,679	5,153	31,936	.....	5,987	43,076	107
.....	11,687	28,889	6,788	19,446	4,000	5,028	35,262	108
.....	2,926	4,478	.....	1,426	.....	130	1,556	109
.....	6,199	14,497	1,606	17,275	6,404	1,021	26,306	110
.....	4,715	6,997	28	.....	.....	75	103	111
10,094	5,121	17,995	1,335	15,621	3,821	55	20,832	112
7,941	2,400	12,207	.....	5,700	.....	.....	5,700	113
.....	725	2,583	1,770	.....	.....	.....	1,770	114
.....	1,448	3,227	.....	1,056	.....	297	1,353	115
.....	7,646	24,213	5,764	11,582	2,000	3,153	22,499	116
.....	800	1,995	.....	2,000	.....	.....	2,000	117
.....	38	588	109	.....	.....	199	308	118
200	60	366	.....	.....	.....	.....	.....	119
.....	2,042	4,899	.....	815	.....	185	1,000	120
.....	23,769	50,421	9,153	27,229	.....	9,502	45,884	121
.....	1,440	6,515	2,238	1,169	1,450	.....	4,857	122
.....	.....	1,666	.....	.....	.....	.....	.....	123
.....	2,200	3,672	207	780	.....	10	997	124
5,000	1,802	16,111	.....	33,204	.....	10,646	43,850	125
6,400	1,301	14,025	4,832	.....	.....	.....	4,832	126
.....	1,084	1,567	.....	.....	297	116	413	127
.....	400	1,327	1	132	1,713	318	2,164	128
.....	7,167	25,332	5,034	31,579	.....	4,905	41,518	129
.....	806	2,122	.....	6,472	.....	140	6,612	130
.....	1,182	3,789	1,007	1,030	.....	.....	2,037	131
.....	800	1,319	.....	.....	.....	.....	.....	132
402	840	3,329	1,194	500	.....	27	1,721	133
.....	600	1,866	.....	.....	600	125	725	134
.....	800	3,817	.....	5,970	.....	.....	5,970	135
.....	90	1,760	25	90	.....	.....	115	136
252	602	1,344	77	402	.....	23	502	137
.....	1,060	1,418	.....	.....	.....	.....	.....	138
.....	2,909	12,421	4,502	6,338	.....	685	11,525	139
.....	1,610	2,665	.....	1,266	423	.....	1,689	140
.....	2,611	4,937	1,699	.....	.....	.....	1,699	141
.....	1,100	6,371	.....	6,284	.....	.....	6,284	142
.....	215	583	.....	.....	133	606	739	143
2,931	3,885	11,333	1,229	15,364	5,633	2,116	24,342	144
17,877	.....	23,043	2,718	.....	2,500	145	5,363	145
.....	751	2,282	.....	751	.....	.....	751	146
.....	3,711	13,370	4,606	6,110	.....	1,598	12,314	147
.....	3,868	5,067	.....	2,443	.....	.....	2,443	148
.....	3,998	4,314	.....	3,873	.....	100	3,973	149
6,231	2,383	13,057	3,050	7,000	.....	20	10,070	150
.....	14,619	16,316	.....	14,364	9,000	.....	23,364	151
.....	54,940	59,240	49	51,121	.....	962	52,132	152
.....	800	1,514	.....	.....	200	.....	200	153
.....	442	774	.....	.....	434	.....	434	154
.....	5,060	7,032	.....	2,060	920	.....	2,980	155
.....	329	1,235	.....	1,809	.....	.....	1,809	156

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1903.						
	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
157. Emo, Rainy River	51	3,137	195			1,309	
158. Enniskillen, Lambton	6,641	31,787	80		614		7,805
159. Ennismore, Peterborough	156	3,469					
160. Eramosa, Wellington	579	12,574	152		14		
161. Erin, Wellington	756	15,014	130				
162. Ernestown, Lennox and Addington	1	15,636	20	9,475	1,073		
163. Esquesing, Halton	2,354	15,857	115	487	1,877		
164. Essa, Simcoe	893	14,625	150				
165. Etobicoke, York	8,582	22,698	588	3,235	550	1,936	
166. Euphemia, Lambton	126	9,519	102			1,500	
167. Euphrasia, Grey	638	14,506	24			1,000	
168. Faraday, Hastings	75	4,135	224			30	400
169. Fenelon, Victoria	794	9,046	32			400	
170. Ferris, Nipissing	607	2,084				300	
171. Finch, Stormont	30	16,589	409			9,465	
172. Fitzroy, Carleton	1,662	10,048	63			500	
173. Flamboro E., Wentworth	172	13,573	218		38		
174. Flamboro, W., Wentworth	500	12,023	198	198	511	1,383	
175. Flos, Simcoe	7,186	18,384	215		50	2,200	
176. Foley, Parry Sound	544	1,586	137				
177. Fredericksburg N., Lennox and Add.	170	6,902			121		
178. Fredericksburg S., Lennox and Add.	155	5,666			37		
179. Fullarton, Perth	1,441	14,327	87			6,375	
180. Gainsborough, Lincoln	225	9,131				300	
181. Galway and Cavendish, Peterborough	126	1,506					
182. Garafraxa E., Dufferin	916	9,652				1,500	
183. Garafraxa W., Wellington	785	10,361				3,930	
184. Georgina, York	538	6,061	58			300	
185. Glamorgan, Haliburton	72	1,842	41				
186. Glanford, Wentworth	2,162	6,971	24	300	364		
187. Glenelg, Grey	1,958	8,898	57		20	800	
188. Gloucester, Carleton	243	26,270	377		40	3,727	
189. Goderich, Huron	3,307	10,425				1,750	700
190. Gordon, Manitoulin	1,141	2,189	6			300	
191. Gosfield N., Essex	639	13,187	11		364		22,664
192. Gosfield S., Essex	94	14,957	28		118	2,000	7,100
193. Goulbourn, Carleton	1,991	10,730	52		440	3,002	
194. Gower N., Carleton	1,445	10,158	104	2,776		200	
195. Gower S., Grenville	997	2,634	10				
196. Grantham, Lincoln		10,926	117		46		
197. Grattan, Renfrew	1,258	2,517	1				
198. Greenoch, Bruce	478	12,790	144	67		1,300	
199. Grey, Huron	181	14,607	78	7,607	297	2,000	10,541
200. Griffith and Matawatchan, Renfrew	19	1,447					
201. Grimsby N., Lincoln	203	8,816		918	20		
202. Grimsby S., Lincoln	893	8,271	137			600	
203. Guelph, Wellington		9,955	58	2,000	672	3,611	
204. Gwillimbury E., York	2,182	12,617	153	2,658	508		
205. Gwillimbury N., York	535	5,761	68				
206. Gwillimbury, W., Simcoe	919	10,508					
207. Hagarty, Jones, etc., Renfrew		5,518	230	100	40	184	
208. Hagerman, Parry Sound	272	1,368	24				

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Disbursements, 1903.											
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	4,692	461	235	990	70	.....	.....	1,490	..	.....	157
490	47,417	1,727	1,557	8,644	.....	512	3,063	10,704	8,079	.....	158
.....	3,625	235	37	279	135	10	1,219	1,480	.....	.....	159
15	13,334	713	325	2,955	.....	70	3,172	5,320	.....	.....	160
.....	15,900	721	185	1,944	.....	14	5,212	7,123	.....	.....	161
23	26,228	653	202	2,111	.....	182	5,938	6,233	.....	9,475	162
11	20,701	1,000	357	2,284	250	598	3,419	7,543	.....	385	163
25	15,693	1,006	207	2,443	.....	228	3,974	5,870	.....	.....	164
325	37,914	1,798	1,411	7,274	.....	87	3,140	7,837	.....	3,295	165
17	11,264	555	302	2,363	.....	96	1,529	4,415	57	.....	166
118	16,286	750	778	2,131	.....	233	2,465	6,859	.....	.....	167
212	5,076	327	248	841	.....	.....	259	2,916	.....	.....	168
154	10,426	497	245	1,513	.....	109	1,718	4,590	.....	.....	169
16	3,007	540	129	54	240	15	.....	1,327	.....	.....	170
1,008	27,501	724	704	1,532	100	75	1,205	5,341	7,522	.....	171
56	12,329	931	642	2,915	.....	50	2,236	4,190	.....	.....	172
389	14,390	672	227	1,463	.....	163	4,149	4,505	.....	.....	173
*2,707	17,520	814	406	2,369	.....	405	3,793	4,534	112	130	174
17	28,052	993	832	2,932	.....	96	2,878	6,616	195	131	175
23	2,290	298	87	240	.....	130	.....	605	.....	.....	176
48	7,241	360	130	1,764	.....	240	2,031	2,466	.....	.....	177
.....	5,858	247	68	610	.....	20	2,463	2,316	.....	27	178
667	22,897	665	189	8,121	.....	35	3,453	4,000	738	.....	189
82	9,738	362	104	1,691	.....	.....	2,200	4,506	.....	.....	180
391	2,023	191	45	204	.....	7	302	1,162	.....	.....	181
23	12,091	555	189	1,968	.....	9	1,724	4,377	.....	.....	182
65	15,141	632	237	3,294	.....	5	3,211	2,583	612	.....	183
4	6,961	355	214	1,063	.....	42	1,274	2,933	.....	.....	184
132	2,087	230	69	132	.....	63	194	788	.....	.....	185
40	9,861	454	145	312	475	48	2,875	2,887	.....	300	186
193	11,926	748	272	2,132	.....	280	1,344	4,421	.....	.....	187
217	30,874	2,036	644	5,510	.....	82	4,018	9,991	494	40	188
537	16,719	607	206	3,867	.....	7	2,205	4,469	.....	.....	189
.....	3,636	270	124	319	.....	47	.....	1,125	.....	600	190
†1,480	38,345	809	707	1,905	.....	209	1,194	3,891	10,239	.....	191
370	24,667	694	519	3,311	.....	14	1,648	5,726	3,383	.....	192
230	16,445	767	112	3,638	.....	60	2,386	5,019	.....	.....	193
85	14,768	604	149	2,481	.....	99	1,712	4,222	1,684	1,381	194
2	3,643	249	136	531	.....	30	747	1,275	102	.....	195
225	11,314	647	137	974	.....	18	3,913	3,446	.....	.....	196
.....	3 776	310	29	247	.....	7	543	1,802	.....	.....	197
46	14,825	687	925	2,002	.....	79	2,257	6,557	.....	74	198
‡4,615	39,926	758	239	2,383	.....	40	2,216	5,475	8,155	15,215	199
34	1,500	216	190	23	.....	.....	.....	748	.....	.....	200
776	10,733	437	98	2,364	.....	67	2,281	2,445	1,827	.....	201
119	10,020	432	168	1,622	.....	36	1,369	3,843	.....	.....	202
179	16,475	827	275	2,644	.....	100	2,907	4,150	.....	2,154	203
278	18,396	686	311	2,901	.....	77	2,743	6,614	.....	2,658	204
4	6,368	421	131	586	.....	39	1,414	3,161	.....	.....	205
.....	11,427	694	146	1,289	.....	196	2,938	5,077	.....	.....	206
370	6,442	416	175	436	.....	50	488	3,635	.....	34	207
278	1,942	213	93	177	19	5	.....	1,093	.....	.....	208

*Township's share of sale of road to county. †Including $947 premium on debentures sold.
‡Including $1,173 from other municipalities as share of debt.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS.

Townships.	Disbursements, 1903.—*Continued.*						Assets on
	Debentures redeemed.	Current Loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
157. Emo	137	1,050	132	127	4,692	..	2,387
158. Enniskillen	6,994	.....	1,270	610	43,160	4,257	31,157
159. Ennismore	.....	.....	.....	35	3,430	195	1,201
160. Eramosa	.....	.....	18	96	12,669	665	7,935
161. Erin	270	.....	36	76	15,581	319	2,536
162. Ernestown	66	1,000	38	208	26,106	122	3,788
163. Esquesing	.....	.....	.....	383	16,219	4,482	404
164. Essa	140	.....	85	139	14,092	1,601	362
165. Etobicoke	4,023	1,936	1,118	708	32,627	5,287	3,210
166. Euphemia	110	1,500	73	106	11,106	158	4,714
167. Euphrasia	117	1,000	42	179	14,554	1,732	1,347
168. Faraday	229	.....	188	68	5,076	.....	3,455
169. Fenelon	100	400	32	99	9,303	1,123	3,715
170. Ferris	79	24	41	128	2,577	430	2,155
171. Finch	1,196	7,813	965	270	27,447	54	2,690
172. Fitzroy	.....	.....	.....	442	11,406	923	7,029
173. Flamboro E	.....	.....	.....	266	11,445	2,945	4,157
174. Flamboro W	.....	2,733	63	391	15,750	1,770	1,677
175. Flos	1,682	2,200	1,372	53	19,980	8,072	2,328
176. Foley	.....	.....	.....	4	1,364	926	270
177. Fredericksburg N	.....	.....	.....	44	7,035	206	2,396
178. Fredericksburg S	.....	.....	.....	46	5,797	61	2,740
179. Fullarton	.....	4,875	187	179	22,442	455	106
180. Gainsborough	.....	300	5	411	9,579	159	1,336
181. Galway and Cavendish	.....	.....	.....	25	1,936	87	1,745
182. Garafraxa E	467	1,500	182	52	11,023	1,068	.....
183. Garafraxa W	.....	3,930	70	133	14,707	434	7,899
184. Georgina	219	300	15	85	6,500	461	20
185. Glamorgan	142	.....	21	391	2,030	57	1,490
186. Glanford	.....	.....	.....	136	7,632	2,229	.....
187. Glenelg	.....	800	11	226	10,234	1,692	.....
188. Gloucester	1,490	5,448	749	372	30,874	.....	24,500
189. Goderich	265	1,750	65	52	13,493	3,226	61
190. Gordon	.....	.....	89	8	2,582	1,054	484
191. Gosfield N	3,541	.....	1,045	897	24,437	13,908	10,189
192. Gosfield S	3,445	3,000	1,020	372	23,132	1,535	10,586
193. Goulbourn	.....	2,800	168	264	15,214	1,231	3,211
194. Gower N	614	.....	386	36	13,368	1,400	2,164
195. Gower S	.....	.....	.....	25	3,095	548	733
196. Grantham	.....	.....	.....	157	9,292	2,022	837
197. Grattan	96	.....	25	223	3,282	494	1,194
198. Greenock	150	1,300	59	397	14,487	338	1,798
199. Grey	1,255	2,000	1,178	265	39,179	747	2,977
200. Griffith and Matawatchan	.....	.....	.....	140	1,317	183	352
201. Grimsby N	249	.....	149	316	10,233	500	1,709
202. Grimsby S	594	600	221	108	8,993	1,027	335
203. Guelph	.....	2,602	9	807	16,475	.....	8,447
204. Gwillimbury E	.....	.....	.....	246	16,236	2,160	100
205. Gwillimbury N	.....	.....	.....	149	5,901	467	45
206. Gwillimbury W	.....	.....	.....	309	10,599	828	816
207. Hagarty, Jones, etc	477	340	171	220	6,442	.....	1,352
208. Hagerman	.....	.....	.....	20	1,620	322	1,069

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.				
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	1,000	3,387	1,545	2,040	259	.....	3,844	157
.....	23,310	58,724	1,957	25,710	.....	1,469	29,136	158
.....	.....	1,396	897	.....	.....	.....	897	159
.....	12	8,612	6,827	.....	.....	285	7,112	160
....	618	3,473	.....	540	.....	3	543	161
23,100	1,001	28,011	2,106	.....	.....	.....	2,106	162
39,373	250	44,509	.....	.....	.....	353	353	163
.....	1,375	3,338	.....	1,375	.....	105	1,480	164
13,264	14,732	36,493	4,991	19,130	.....	277	24,398	165
.....	929	5,861	2,266	.....	1,548	1,215	5,029	166
.....	.....	3,079	225	388	.....	.....	613	167
.....	1,419	4,874	2,600	3,386	30	340	6,356	168
.....	825	5,663	3,276	700	.....	284	4,260	169
.....	892	3,477	453	652	700	306	2,111	170
.....	7,886	10,630	2,039	28,700	6,905	2,903	40,547	171
.....	800	8,752	3,376	.....	500	.....	3,876	172
.....	1,900	9,002	3,975	.....	.....	.....	3,975	173
15,386	3,178	22,011	560	.....	2,288	.....	2,848	174
1,436	4,525	16,361	6,448	25,911	.....	.....	32,359	175
.....	509	1,705	508	.....	.....	.....	508	176
3,500	580	6,682	1,261	.....	.....	.....	1,261	177
1,264	800	4,865	1,361	.....	.....	20	1,381	178
.....	800	1,361	.....	.....	2,100	.....	2,100	179
.....	233	1,728	361	.....	.....	62	423	180
.....	.....	1,832	975	.....	.....	.....	975	181
.....	61	1,129	113	3,247	.....	.....	3,360	182
.....	776	9,109	7,578	.....	.....	283	7,861	183
.....	240	721	.....	.....	.....	.....	.....	184
.....	236	1,783	760	209	.....	53	1,022	185
7,300	1,360	10,889	.....	.....	.....	269	269	186
.....	1,425	3,117	.....	.....	.....	.....	.....	187
1,383	9,223	35,106	15,465	11,867	3,779	75	31,186	188
.....	7,057	10,344	2,672	1,885	.....	.....	4,557	189
600	.....	2,138	700	.....	300	.....	1,000	190
.....	5,747	29,844	1,369	40,053	.....	16,090	57,512	191
.....	246	12,367	1,925	24,417	.....	6,247	32,589	192
7,691	548	12,681	2,435	.....	1,317	1,211	4,963	193
7,281	2,500	13,345	1,712	7,229	204	.....	9,145	194
.....	.....	1,281	778	.....	.....	.....	778	195
.....	62	2,921	256	.....	.....	100	356	196
.....	844	2,532	726	404	.....	.....	1,130	197
74	558	2,768	861	501	.....	91	1,453	198
15,215	1,652	20,591	467	37,921	.....	85	38,473	199
.....	.....	535	418	.....	.....	73	491	200
.....	1,960	4,169	2,511	2,227	.....	60	4,798	201
.....	1,693	3,055	.....	3,673	.....	30	3,703	202
14,660	60	23,167	2,943	.....	3,634	240	6,817	203
12,974	300	15,534	.....	.....	1,851	.....	1,851	204
.....	.....	512	.....	.....	.....	.....	.....	205
.....	200	1,844	.....	.....	.....	.....	.....	206
1,770	252	3,374	.....	3,233	214	.....	3,447	207
.....	640	2,031	714	.....	.....	50	764	208

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1903.						
	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
209. Haldimand, Northumberland	1,592	16,290	127	.....	28	2,000	.....
210. Hallam, Algoma	1,405	2,153	280	.....	.....	.....	.....
211. Hallowell, Prince Edward	565	11,279	44	.....	.....	2,000	.....
212. Hamilton, Northumberland	676	16,857	148	100	71	1,850	.....
213. Harvey, Peterborough	.....	4,514	17	.....	.....	.....	.....
214. Harwich, Kent	4,604	27,979	304	.....	49	1,500	528
215. Hawkesbury, E., Prescott	1,246	12,882	208	.....	.....	600	.....
216. Hawkesbury, W., Prescott	2,904	7,510	50	.....	.....	1,500	.....
217. Hay, Huron	146	17,639	178	1,260	82	1,200	1,711
218. Head, Clara and Maria, Renfrew	216	1,163	140	.....	.....	.....	.....
219. Hibbert, Perth	2,818	13,790	94	3,935	117	250	1,890
220. Hillier, Prince Edward	275	7,109	31	.....	11	500	.....
221. Hilton, Algoma	472	1,428	65	.....	6	100	.....
222. Himsworth, N., Parry Sound	715	1,773	102	.....	.....	.....	.....
223. Himsworth, S. Parry Sound	1,418	4,257	229	.....	.....	200	.....
224. Hinchinbrooke, Frontenac	680	4,957	54	.....	.....	700	.....
225. Holland, Grey	405	11,463	187	.....	.....	1,050	.....
226. Hope, Durham	352	12,673	65	.....	1,563	955	.....
227. Horton, Renfrew	919	4,054	6	50	54	.....	.....
228. Houghton, Norfolk	.....	8,249	27	.....	.....	1,550	.....
229. Howard, Kent	4,357	21,197	38	.....	101	.....	1,962
230. Howe Island, Frontenac	355	1,627	.....	.....	.....	.....	.....
231. Howick, Huron	2,831	17,877	84	4,287	365	2,800	1,300
232. Howland, Bidwell & Sheg., Manito'n	616	2,832	32	.....	.....	.....	.....
233. Hullett, Huron	69	15,690	70	5,059	36	2,500	.....
234. Humberstone, Welland	1,291	10,525	299	.....	.....	.....	1,083
235. Humphrey, Parry Sound	653	1,866	95	.....	.....	.....	.....
236. Hungerford, Hastings	.....	11,448	199	.....	.....	1,947	.....
237. Huntingdon, Hastings	79	7,867	20	.....	2	.....	1,200
238. Huntley, Carleton	2,513	9,625	97	.....	.....	500	.....
239. Huron, Bruce	2,091	16,044	258	.....	27	982	.....
240. Innisfil, Simcoe	2,466	18,137	125	1,761	83	.....	3,195
241. Jocelyn, Algoma	.....	2,505	.....	.....	11	200	.....
242. Johnston, Tarbutt, etc., Algoma	910	3,617	2	.....	4	700	750
243. Joly, Parry Sound	70	850	.....	.....	.....	100	.....
244. Kaladar and Ang., Len'x & Addington	474	2,903	23	.....	.....	.....	.....
245. Keewatin, Rainy River	.....	7,379	443	.....	.....	787	.....
246. Kennebec, Frontenac	275	3,172	23	.....	.....	.....	.....
247. Kenyon, Glengarry	.....	14,036	307	60	.....	1,684	4,587
248. Keppel, Grey	1,715	14,199	162	28	.....	125	.....
249. Kincardine, Bruce	.....	11,677	24	.....	.....	1,100	.....
250. King, York	.....	24,145	382	11	1,800	3,500	.....
251. Kingston, Frontenac	6,431	14,792	141	.....	89	.....	.....
252. Kinloss, Bruce	2,553	8,720	67	.....	31	.....	.....
253. Kitley, Leeds	295	10,004	158	.....	.....	372	.....
254. Laird, Algoma	663	1,397	8	.....	.....	.....	.....
255. Lanark, Lanark	896	5,991	14	.....	16	.....	.....
256. Lancaster, Glengarry	2,094	14,328	277	.....	.....	1,900	850
257. Lavant, Lanark	217	1,773	40	.....	.....	.....	.....
258. Laxton, Digby & Longford, Victoria	495	2,427	.....	1,032	93	.....	.....
259. Leeds and Lansdowne Front, Leeds	120	15,160	112	.....	.....	3,300	.....
260. Leeds and Lansdowne Rear, Leeds	1,611	10,103	94	.....	116	1,000	.....

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES 1903.

Disbursements, 1903.												
Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
88	20,125	1,060	846	2,875	18	306	.....	7,392	.....	.....	209
.....	3,838	293	221	1,107	.....	23	.....	1,000	.....	.....	210
730	14,618	346	334	2,037	.....	432	2,439	5,201	.....	.....	211
184	19,886	1,010	309	4,531	.....	249	3,157	7,323	.....	.....	212
39	4,570	358	93	513	.....	.....	522	1,771	.....	.....	213
166	35,130	1,672	496	5,974	.....	819	6,151	10,057	1,828	.....	214
.....	14,936	479	702	1,385	.....	.....	1,904	8,105	.....	.....	215
884	12,848	327	137	2,071	.....	11	891	2,338	108	.....	216
683	22,899	566	325	5,736	.....	73	2,068	6,405	2,711	859	217
.....	1,519	264	33	4	.....	9	100	780	.....	.....	218
1,059	23,953	667	89	3,299	250	58	3,470	3,839	2,253	.....	219
519	8,445	335	139	1,217	73	344	1,452	4,000	.....	.....	220
7	2,078	244	127	479	.....	4	.....	494	.....	35	221
44	2,634	266	87	168	.....	.....	.....	1,118	.....	.....	222
.....	6,104	528	220	465	.....	19	.....	3,046	.....	.....	223
1	6,392	335	147	727	.....	43	1,028	2,669	.....	.....	224
99	13,204	759	253	1,286	.....	196	1,829	5,852	.....	.....	225
239	15,847	883	327	2,076	.....	744	3,572	5,746	.....	.....	226
*5,629	10,712	331	124	438	.....	55	840	2,288	.....	.....	227
67	9,893	504	205	2,736	.....	52	514	3,417	.....	.....	228
70	27,725	1,250	274	5,177	.....	367	3,993	6,190	2,432	.....	229
.....	1,982	115	42	114	.....	.....	505	790	.....	.....	230
80	29,624	977	122	3,974	.....	53	2,547	8,397	100	5,312	231
.....	3,480	325	57	326	25	56	.....	1,938	.....	.....	232
235	23,659	772	191	5,797	125	10	2,862	5,962	64	4,184	233
79	13,277	675	398	1,511	.....	5	2,972	4,379	772	.....	234
24	2,638	254	93	514	38	6	.....	873	.....	.....	235
55	13,649	740	448	1,071	166	139	4,154	6,492	.....	.....	236
255	9,423	549	139	350	.....	149	1,709	5,739	.....	.....	237
.....	12,735	930	258	1,779	.....	25	1,756	3,905	.....	.....	238
612	20,014	753	320	4,006	.....	88	2,933	6,848	.....	.....	239
192	25,959	1,212	777	2,535	.....	471	4,202	7,009	2,676	2,853	240
.....	2,716	310	230	136	.....	49	.....	1,189	.....	67	241
20	6,003	262	95	640	.....	15	.....	2,565	.....	.....	242
19	1,039	202	41	82	24	5	.....	395	.....	.....	243
292	3,692	397	175	442	.....	.....	414	1,737	.....	.....	244
456	9,065	535	491	1,395	.....	135	.....	3,260	.....	.....	245
155	3,625	343	50	362	.....	39	456	1,948	.....	.....	246
407	21,081	455	407	2,811	.....	152	1,472	7,846	2,010	209	247
20	16,259	1,009	177	3,404	.....	150	1,820	7,685	152	222	248
301	13,102	548	288	2,201	.....	5	2,574	5,791	.....	67	249
22	29,860	1,220	523	7,306	.....	175	5,232	10,693	.....	.....	250
160	21,613	583	287	1,296	.....	220	7,046	5,470	22	.....	251
394	11,765	600	122	2,249	.....	51	1,945	4,120	.....	.....	252
17	10,826	501	210	2,062	.....	17	1,766	4,475	.....	.....	253
20	2,088	197	77	313	.....	5	.....	739	.....	.....	254
14	6,931	407	199	604	.....	10	1,495	3,278	.....	.....	255
.....	19,449	905	1,176	4,350	55	63	2,506	7,571	.....	.....	256
2	2,032	297	46	99	.....	.....	207	1,134	.....	.....	257
66	4,113	341	110	1,514	.....	30	218	1,422	.....	.....	258
24	18,716	720	399	5,809	.....	39	.....	6,330	.....	.....	259
227	13,151	598	140	2,025	.....	23	1,321	4,950	.....	668	260

*Including $5,625 from Dominion Government, refund railway bonus.

STATISTICS OF ONTARIO
RECEIPTS, DISBURSEMENTS.

Townships.	Disbursements, 1903—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
209. Haldimand	59	1,025	22	512	14,115	6,010	950
210. Hallam	158	.....	154	117	3,073	765	715
211. Hallowell	.....	2,000	36	1,272	14,097	521	230
212. Hamilton	.....	1,850	29	461	18,919	967	2,041
213. Harvey	156	64	28	354	3,859	711	1,600
214. Harwich	3,345	1,500	460	1,291	33,593	1,537	4,498
215. Hawkesbury, E.	200	1,400	78	392	14,645	291	607
216. Hawkesbury, W.	1,297	1,913	617	556	10,266	2,582	.....
217. Hay	2,045	1,200	343	514	22,845	54	1,268
218. Head, Clara and Maria	.....	.....	.....	17	1,207	312	993
219. Hibbert	1,285	100	246	*1,411	16,967	6,986	.....
220. Hillier	.....	500	13	24	8,097	348	.....
221. Hilton	.....	100	53	54	1,590	488	2,575
222. Himsworth, N.	193	.....	124	77	2,033	601	769
223. Himsworth, S.	504	200	159	273	5,414	690	1,563
224. Hinchinbrooke	.....	907	57	218	6,131	261	563
225. Holland	.....	1,050	93	1,046	12,364	840	1,334
226. Hope	690	1,083	296	430	15,847	.....	3,334
227. Horton	.....	.....	.....	11	4,087	6,625	1,196
228. Houghton	261	1,736	175	132	9,732	161	1,188
229. Howard	1,362	.....	288	701	22,034	5,691	2,249
230. Howe Island	.....	.....	.....	.....	1,566	416	255
231. Howick	459	2,800	1,136	132	26,009	3,615	1,302
232. Howland, Bidwell and Sheg.	100	.....	20	252	3,099	381	236
233. Hullett	718	2,500	285	49	23,519	140	.....
234. Humberstone	622	.....	94	689	12,117	1,160	1,396
235. Humphrey	168	180	14	59	2,199	439	471
236. Hungerford	.....	21	.....	418	13,649	.....	7,436
237. Huntingdon	217	.....	37	36	8,925	498	3,924
238. Huntley	636	500	137	417	10,343	2,392	1,353
239. Huron	576	982	111	917	17,534	2,480	835
240. Innisfil	862	.....	408	114	23,119	2,840	993
241. Jocelyn	.....	15	51	176	2,223	493	170
242. Johnston, Tarbutt, etc.	100	549	42	102	4,370	1,633	1,387
243. Joly	.....	200	8	10	967	72	502
244. Kaladar and Anglesea	.....	.....	.....	344	3,509	183	1,187
245. Keewatin	611	2,155	346	137	9,065	.....	1,712
246. Kennebec	.....	.....	.....	117	3,315	310	2,559
247. Kenyon	652	3,215	457	†1,395	21,081	.....	4,388
248. Keppel	382	135	234	212	15,582	677	8,356
249. Kincardine	57	1,127	43	165	12 866	236	2,340
250. King	174	3,500	74	752	29,649	211	1,920
251. Kingston	.....	.....	.....	213	15,137	6,476	5,664
252. Kinloss	130	.....	36	110	9,363	2,402	8
253. Kitley	.....	372	7	157	9,567	1,259	72
254. Laird	140	.....	64	.....	1,535	553	379
255. Lanark	252	.....	26	14	6,285	646	933
256. Lancaster	212	1,900	82	365	19,185	264	2,773
257. Lavant	.....	.....	.....	55	1,838	194	89
258. Laxton, Digby and Longford	.....	.....	251	52	3,938	175	.....
259. Leeds and Lansdowne Front	.....	4,500	140	208	18,145	571	322
260. Leeds and Lansdowne Rear	.....	1,000	264	30	11,019	2,132	365

*Including $1,312 rebate of county rate to rate-payers.
†Including $574 Board of Health expenses; and $754 paid to other municipalities as share of debt.

TOWNSHIP MUNICIPALITIES—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					
Sinking Funds and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	2,915	9,875	2,601	65	2,050	99	4,815	209
.....	3,330	4,810	1,000	2,930	.....	59	3,989	210
.....	2,006	2,757	.....	.....	.....	.....	.....	211
63	2,082	5,153	.....	.....	.....	70	70	212
.....	374	2,685	1,744	3,374	.....	.....	5,118	213
.....	9,427	15,462	28	6,767	.....	2,773	9,568	214
.....	1,929	2,827	144	429	1,519	1,037	3,129	215
.....	9,803	12,385	.....	10,459	825	1,384	12,668	216
859	2,023	4,204	300	7,892	.....	10	8,202	217
.....	.....	1,305	260	.....	.....	.....	260	218
.....	1,025	8,011	.....	6,764	150	.....	6,914	219
.....	2,000	2,348	.....	.....	.....	.....	.....	220
220	1,445	4,728	580	1,000	.....	.....	1,580	221
.....	1,119	2,489	242	884	.....	65	1,191	222
.....	2,110	4,363	1,525	2,110	.....	225	3,860	223
.....	1,000	1,824	28	.....	.....	45	73	224
.....	360	2,534	.....	.....	.....	95	95	225
30,840	600	34,774	.....	6,211	718	.....	6,929	226
360	1,275	9,456	421	.....	.....	.....	421	227
.....	5,314	6,663	1,253	2,000	300	.....	3,553	228
.....	6,007	13,947	.....	6,982	.....	1,170	8,152	229
.....	.....	671	505	.....	.....	105	610	230
9,657	2,130	16,704	3,070	21,377	660	90	25,197	231
.....	333	950	300	300	.....	.....	600	232
1,722	.....	1,862	.....	4,761	.....	.....	4,761	233
.....	5,371	7,927	800	2,327	.....	222	3,349	234
.....	930	1,840	608	.....	.....	.....	608	235
.....	3,000	10,436	3,700	.....	1,947	300	5,947	236
.....	2,153	6,575	3,127	1,653	.....	.....	4,780	237
.....	1,439	5,184	1,756	2,117	.....	12	3,885	238
.....	3,442	6,757	.....	1,442	.....	.....	1,442	239
2,853	1,447	8,133	.....	7,102	.....	.....	7,102	240
395	1,115	2,173	200	600	200	10	1,010	241
.....	2,350	5,370	425	2,150	727	150	3,452	242
.....	.....	574	155	.....	.....	32	187	243
.....	354	1,724	1,006	.....	.....	314	1,320	244
.....	389	2,101	.....	4,624	787	.....	5,411	245
.....	600	3,469	2,526	.....	.....	157	2,683	246
149	282	4,819	.....	4,512	4,697	22	9,231	247
1,607	1,277	11,917	4,527	7,463	.....	222	12,212	248
201	639	3,416	.....	524	.....	.....	524	249
39,253	1,975	43,359	.....	.....	3,281	.....	3,281	250
1,650	1,650	15,440	7,224	.....	.....	25	7,249	251
.....	1,383	3,793	.....	780	.....	.....	780	252
.....	2,000	3,331	3	.....	.....	.....	3	253
.....	1,330	2,262	.....	930	.....	.....	930	254
.....	1,800	3,379	.....	264	.....	191	455	255
.....	638	3,675	2,092	638	.....	1,412	4,142	256
.....	.....	283	130	.....	.....	.....	130	257
5,469	.....	5,644	.....	5,000	.....	.....	5,000	258
.....	5,150	6,043	2,103	.....	.....	80	2,183	259
4,150	.....	6,647	12	5,000	.....	60	5,072	260

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1903. Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures
	$	$	$	$	$	$	$
261. Limerick, Hastings	64	1,575	20			75	
262. Lindsay, Bruce	780	5,966				350	
263. Lobo, Middlesex	13,172	16,010	106		162		
264. Lochiel, Glengarry	21	15,049	398				
265. Logan, Perth	6,208	20,189	67			5,000	1,185
266. London, Middlesex	17,595	35,921	321		232		
267. Longueuil, Prescott		2,982	32			9	
268. Loughborough, Frontenac	249	7,104	70		50	600	
269. Louth, Lincoln	641	9,900	101		49		
270. Luther E., Dufferin	1,008	9,504				3,000	
271. Luther W., Wellington	911	10,326	47		8	1,900	1,800
272. Lutterworth, Haliburton	584	953					
273. McDougall, Parry Sound		2,024					
274. McGillivray, Middlesex	2,505	16,273	54		21	1,100	1,400
275. McIrvine, Rainy River	1,507	1,067	836				
276. McKellar, Parry Sound	381	1,900	44				
277. McKillop, Huron	4,052	14,719	16		852		2,050
278. McKim, Nipissing	200	4,858				1,500	
279. McLean and Ridout, Muskoka	239	1,885	68				
280. McMurrich, Parry Sound	621	1,774	32				
281. McNab, Renfrew	1,824	9,925	157		62		
282. Macaulay, Muskoka	219	2,823	28			200	800
283. Macdonald and Meredith, Algoma	63	2,442					700
284. Machar, Parry Sound	747	2,948	34			200	
285. Madoc, Hastings		12,614	16			786	
286. Maidstone, Essex	495	16,865	181		110		9,036
287. Malahide, Elgin	5,287	22,647	84		13	5,000	
288. Malden, Essex	624	8,003	61			3,325	
289. Manvers, Durham	1,010	12,614	226			1,668	
290. Mara, Ontario	821	11,362	150			3,700	
291. March, Carleton	579	4,444	107		48		
292. Mariposa, Victoria	8,277	21,799			68	3,000	1,820
293. Markham, York	7,872	25,452	220		22		
294. Marlborough, Carleton	952	6,605	40			1,050	
295. Marmora and Lake, Hastings	175	6,551	127		15	3,087	
296. Maryborough, Wellington	864	18,173	119			5,000	
297. Marysburg N., Prince Edward		386			375	4,623	
298. Marysburg S., Prince Edward	21	4,471	3	185	498	892	
299. Matchedash, Simcoe	706	1,022					
300. Matilda, Dundas		19,827			43	20,446	5,202
301. Mattawa, Nipissing	9	406					
302. Mayo, Hastings		1,637					
303. Medonte, Simcoe	1,510	13,683	161		55		700
304. Medora and Wood, Muskoka	1,356	7,067	123				
305. Melancthon, Dufferin		16,133				3,866	
306. Mersea, Essex	1,337	24,742	157		196	3,956	29,730
307. Metcalfe, Middlesex	2,896	15,497	16		25		693
308. Middleton, Norfolk	147	10,446	50		13	500	900
309. Minden, Haliburton	10	3,248	21				
310. Minto, Wellington	326	20,860	57	2,038	62	1,000	
311. Monaghan N., Peterborough	1,866	4,656	35			1,603	
312. Monaghan S., Northumberland	676	3,409	49				

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Miscellaneous.	Total receipts.	Disbursements, 1903.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
260	1,994	287	81	589	.....	34	111	670	.....	.....	261
516	7,612	522	149	762	110	.....	99	3,440	.....	.....	262
1,119	30,569	830	276	7,856	120	254	5,261	4,985	.....	.....	263
379	15,847	788	1,302	1,271	.....	92	1,519	6,972	.....	.....	264
676	33,325	1,101	234	4,457	.....	172	3,977	4,729	1,011	.....	265
579	54,648	1,868	899	10,618	.....	456	11,341	12,904	.....	.....	266
.....	3,023	186	33	150	.....	2	440	2,009	71	.....	267
.....	8,073	570	244	1,175	.....	54	1,871	3,357	.....	.....	268
.....	10,691	573	249	2,586	.....	10	2,934	3,468	.....	.....	269
99	13,611	466	272	2,668	.....	24	1,448	3,116	47	.....	270
599	15,591	670	215	1,673	.....	9	2,388	5,916	465	32	271
55	1,592	196	49	204	.....	5	184	823	.....	.....	272
208	2,232	242	59	588	.....	5	.....	871	.....	.....	273
102	21,455	782	263	4,570	.....	5	3,571	7,806	384	.....	274
365	3,775	415	616	49	.....	24	.....	1,447	.....	.....	275
261	2,586	249	156	363	196	5	.....	1,056	.....	.....	276
700	22,389	692	138	5,322	.....	65	2,785	4,718	837	.....	277
484	7,042	562	200	1,768	.....	5	.....	1,824	.....	.....	278
66	2,258	219	131	492	.....	43	.....	1,005	.....	.....	279
6	2,433	218	73	378	53	.....	.....	1,108	.....	.....	280
125	12,093	673	267	1,110	238	134	1,418	4,043	105	.....	281
14	4,084	312	69	562	.....	45	.....	1,894	.....	.....	282
8	3,213	134	39	382	.....	2	.....	1,695	.....	.....	283
28	3,957	273	179	286	.....	37	.....	1,647	.....	.....	284
527	13,943	450	165	753	.....	146	3,238	4,808	.....	.....	285
192	26,879	1,048	511	4,754	.....	211	504	6,473	4,052	.....	286
390	33,421	1,110	685	6,952	.....	5	4,222	7,202	1,655	.....	287
7	12,020	574	263	4,101	.....	70	1,151	2,700	223	.....	288
232	15,750	832	311	1,705	.....	305	1,938	6,563	.....	.....	289
15	16,048	902	196	4,551	.....	139	1,502	4,227	353	.....	290
16	5,194	299	144	382	.....	.....	1,519	1,859	.....	.....	291
640	35,604	1,117	720	5,528	.....	739	4,871	9,085	473	.....	292
409	33,975	1,269	776	8,309	132	132	6,996	11,157	.....	.....	293
107	8,754	581	173	825	.....	42	1,138	3,049	1,460	.....	294
258	10,213	226	258	746	.....	204	1,619	3,027	.....	.....	295
47	24,203	845	352	2,925	.....	75	4,016	7,738	29	.....	296
55	5,439	219	181	426	.....	.....	884	2,670	.....	84	297
.....	6,070	286	120	337	.....	22	842	2,516	.....	284	298
56	1,784	183	50	278	.....	8	203	367	.....	50	299
137	45,655	556	780	4,384	.....	452	4,800	8,179	1,542	.....	300
.....	415	77	6	34	.....	25	.....	205	.....	.....	301
310	1,947	228	59	308	.....	26	114	968	.....	.....	302
938	17,047	1,017	426	4,359	.....	96	2,000	5,758	117	.....	303
337	8,883	754	495	3,287	.....	277	.....	3,095	.....	.....	304
5	20,004	745	321	2,633	.....	93	2,509	7,352	.....	.....	305
1,006	61,124	1,608	690	4,500	.....	33	2,953	9,643	17,549	.....	306
568	19,695	624	321	4,134	.....	2	2,959	5,854	927	.....	307
322	12,378	636	253	2,026	.....	19	1,690	3,895	1,189	.....	308
81	3,360	333	86	547	.....	62	84	1,624	.....	.....	309
115	24,458	1,020	270	3,440	.....	5	7,326	6,149	1,415	627	310
30	8,190	335	116	1,780	.....	14	3,117	1,574	.....	.....	311
7	4,141	254	68	848	.....	67	1,100	1,728	.....	.....	312

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures redeemed.	Current Loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
261. Limerick		57	4	21	1,854	140	1,396
262. Lindsay		2,117	26	273	7,498	114	3,316
263. Lobo	323		111	47	20,063	10,506	411
264. Lochiel	600	2,094	145	1,063	15,846	1	14,366
265. Logan	2,441	8,500	966	1,008	28,596	4,729	346
266. London	243		36	558	38,923	15,725	8,191
267. Longueuil		77	4	51	3,023		1,450
268. Loughborough		600	15	177	8,063	10	4,382
269. Louth				75	9,895	796	831
270. Luther E	1,155	3,000	422	324	12,942	669	600
271. Luther W	1,115	1,900	309	110	14,802	789	793
272. Lutterworth				38	1,499	93	776
273. McDougall		71		11	1,847	385	1,220
274. McGillivray	438	1,100	177	214	19,310	2,145	55
275. McIrvine	97	700	168	225	3,741	34	333
276. McKellar	100		24	58	2,207	379	1,703
277. McKillop	929		468	154	16,108	6,281	77
278. McKim	262	1,662	209	235	6,727	315	259
279. McLean and Ridout	134		28	89	2,141	117	1,955
280. McMurrich	82		27	22	1,961	472	1,714
281. McNab				307	8,295	3,798	1,493
282. Macaulay	61	409	60	18	3,430	654	860
283. Macdonald and Meredith				163	2,415	798	745
284. Machar	221	200	169	54	3,066	891	1,112
285. Madoc	1,431	1,529	1,102	321	13,943		7,129
286. Maidstone	2,482	2,000	578	429	23,042	3,837	17,803
287. Malahide	2,217	5,000	535	345	29,928	3,493	837
288. Malden	19	1,080	52	1,012	11,245	775	6,961
289. Manvers	316	1,668	182	566	14,386	1,364	167
290. Mara	221	2,700	246	235	15,272	776	
291. March	428		91	8	4,730	464	2,232
292. Mariposa	649	3,900	336	120	27,538	8,066	
293. Markham	254		178	741	29,944	4,031	869
294. Marlborough	43	200	73	215	7,799	955	2,800
295. Marmora and Lake	252	3,590	206	35	10,163	50	4,529
296. Maryborough	501	5,000	280	72	21,833	2,370	1,327
297. Marysburg N		721	28	226	5,439		4,273
298. Marysburg S		892	82	471	5,849	221	
299. Matchedash			25	41	1,205	579	688
300. Matilda	2,719	21,250	747	246	45,655		1,884
301. Mattawa					347	68	532
302. Mayo		12		7	1,722	225	1,456
303. Medonte	350		114	491	14,728	2,319	2,087
304. Medora and Wood	200		24	78	8,210	673	5,574
305. Melancthon	458	5,407	385	101	20,004		802
306. Mersea	6,758	1,991	1,954	741	48,420	12,704	23,022
307. Metcalfe	642		26	311	15,800	3,895	1,036
308. Middleton	866	500	220	206	11,500	878	3,828
309. Minden	101	200	77	28	3,142	218	2,755
310. Minto	309	1,000	359	75	21,995	2,463	705
311. Monaghan N		1,200	28	26	8,190		
312. Monaghan S			10	43	4,118	23	625

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

December 31, 1903			Liabilities on December 31, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	285	1,821	887	.....	75	67	1,029	261
.....	220	3,650	1,427	.....	497	.....	1,924	262
.....	4,501	15,418	5,262	2,226	.....	.....	7,488	263
.....	1,770	16,137	8,820	1,700	1,050	981	12,551	264
.....	2,305	7,380	.....	15,271	.....	165	15,436	265
.....	2,510	26,426	11,659	510	.....	.....	12,169	266
.....	.....	1,450	1,164	.....	9	.....	1,173	267
.....	.....	4,392	3,675	.....	.....	311	3,986	268
.....	230	1,857	.....	.....	.....	.....	.....	269
.....	3,975	5,244	771	6,545	.....	106	7,422	270
279	2,259	4,120	.....	6,324	.....	50	6,374	271
.....	208	1,077	390	.....	.....	20	410	272
.....	50	1,655	.....	.....	.....	.....	.....	273
.....	4,140	6,340	.....	2,890	.....	.....	2,890	274
.....	3,109	3,476	.....	3,189	.....	.....	3,189	275
.....	685	2,767	800	300	.....	.....	1,100	276
14,582	10,293	31,233	.....	10,293	.....	938	11,231	277
.....	3,857	4,431	294	3,320	.....	355	3,969	278
.....	1,353	3,425	1,017	353	.....	576	1,946	279
.....	819	3,005	1,210	376	.....	.....	1,586	280
.....	1,000	6,291	640	.....	.....	229	869	281
.....	1,789	3,303	1,177	739	147	22	2,085	282
.....	825	2,368	.....	700	.....	.....	700	283
.....	3,181	5,184	822	2,748	.....	.....	3,570	284
.....	2,228	9,357	.....	28,809	786	368	29,963	285
.....	3,130	24,770	7,643	17,499	.....	7,528	32,670	286
.....	843	5,173	.....	8,401	.....	350	8,751	287
.....	1,143	8,879	3,051	432	3,400	67	6,950	288
.....	2,614	4,145	.....	2,614	.....	190	2,804	289
.....	5,410	6,186	.....	3,510	1,000	.....	4,510	290
400	2,250	5,346	.....	1,392	.....	.....	1,392	291
.....	7,076	15,142	4,871	8,361	.....	.....	13,232	292
.....	2,339	7,239	6,434	839	.....	800	8,073	293
.....	260	4,015	1,138	1,172	1,175	2,278	5,763	294
.....	1,514	6,093	1,536	1,514	2,035	465	5,550	295
.....	2,578	6,275	4,065	2,024	.....	445	6,534	296
6,983	1,000	12,256	.....	.....	4,123	21	4,144	297
10,348	850	11,419	.....	.....	1,949	.....	1,949	298
100	500	1,867	736	500	.....	.....	1,236	299
.....	4,474	6,358	.....	12,087	6,859	1,618	20,564	300
.....	.....	600	302	.....	.....	60	362	301
.....	.....	1,681	1,004	.....	.....	473	1,477	302
.....	2,602	7,008	827	2,696	.....	90	3,613	303
.....	1,067	7,314	1,540	200	.....	834	2,574	304
.....	3,190	3,992	.....	1,880	1,107	.....	2,987	305
.....	16,837	52,563	3,648	61,790	2,000	23,847	91,285	306
.....	1,521	6,452	2,956	551	.....	386	3,893	307
.....	2,200	6,906	1,951	4,306	.....	.....	6,257	308
.....	582	3,555	1,823	582	400	.....	2,805	309
407	1,050	4,625	17	8,238	.....	.....	8,255	310
.....	1,415	1,415	.....	.....	403	.....	403	311
.....	85	733	.....	.....	.....	.....	.....	312

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1903. Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
313. Monck, Muskoka	662	3,714	4			900	700
314. Monmouth, Haliburton	148	2,165			5		
315. Mono, Dufferin	658	14,223	40		7	2,950	700
316. Montague, Lanark	180	7,024	16			500	
317. Monteagle and Herschel, Hastings	81	3,611	67				650
318. Moore, Lambton	1,577	31,983	441		4		5,231
319. Morley, Rainy River						150	
320. Mornington, Perth	2,072	20,236	293		26	3,100	2,000
321. Morris, Huron	3,464	10,641	35		29	400	4,435
322. Morrison, Muskoka	1,179	1,618	41		15		
323. Mosa, Middlesex	2,734	13,062				3,558	1,106
324. Moulton, Haldimand		6,411	1		296	2,096	
325. Mountain, Dundas	3,887	17,866	349	124		12,268	17,362
326. Mulmur, Dufferin	1,674	11,508	40	1,255		2,100	
327. Murray, Northumberland	1,999	9,839	42			750	
328. Muskoka, Muskoka	354	2,349			1		
329. Nairn, Hyman and Lorne, Algoma	136	1,252	50				
330. Nassagaweya, Halton	1,553	8,113	32	39	547		
331. Neebing, Thunder Bay	453	3,839	37		45	5,834	
332. Nelson, Halton	717	13,683	80	5,310	1,899	2,576	
333. Nepean, Carleton	1,523	21,258	262		741	626	
334. Niagara, Lincoln	1,013	11,293	148			2,500	
335. Nichol, Wellington	1,373	7,181	104		32		
336. Nipissing, Parry Sound	88	1,297	46				
337. Nissouri E., Oxford	1,542	14,658	278		17	500	
338. Nissouri, W., Middlesex	9,256	19,259	73			3,000	
339. Normanby, Grey	1,830	15,375	302				
340. Norwich N., Oxford	1,356	12,985	3		11	2,700	
341. Norwich S., Oxford	1,390	11,627	109		9	1,800	
342. Nottawasaga, Simcoe	1,182	21,207	323	6,576		2,000	
343. Oakland, Brant	650	3,526			80	400	
344. Oakley, Muskoka	104	1,109	6				475
345. Olden, Frontenac	16	3,673	3	110	12		
346. Oliver, Thunder Bay	129	3,604	114	380		1,389	
347. Oneida, Haldimand	1,267	6,821	20				
348. Onondaga, Brant	721	6,236	32	3		200	1,000
349. Ops, Victoria	6,490	14,179			51	1,000	200
350. Orford, Kent	1,046	19,293	83			8,000	
351. Orillia, Simcoe	954	15,932	66			5,000	
352. Oro, Simcoe	2,942	13,863	30		50		
353. Osgoode, Carleton	647	21,940	838	6,707		3,900	1,500
354. Osnabruck, Stormont	2,629	18,574	220		7	8,600	6,955
355. Oso, Frontenac	499	3,182	104				
356. Osprey, Grey	132	14,216	52			1,000	1,400
357. Otonabee, Peterborough	3,915	15,851	9		15		
358. Oxford-on-Rideau, Grenville	875	10,663	100		14	2,000	
359. Oxford E., Oxford	5,567	11,855	24		123		
360. Oxford, N., Oxford	2,170	6,983	152		35		
361. Oxford, W., Oxford	2,436	11,099	742		22		
362. Pakenham, Lanark	1,399	7,687	167				
363. Palmerston and Canonto, Frontenac	479	2,369	50				
364. Papineau, Nipissing		996				179	

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Miscellaneous.	Total Receipts.	Disbursements, 1903.										No.
		Allowances salaries and commissions.	Other expenses of municipal government.	Roads and Bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.		
$	$	$	$	$	$	$	$	$	$	$		
69	6,049	262	81	1,774	.....	5	.....	2,059	.....	.....		313
105	2,423	180	77	70	.....	5	.....	1,057	.....	45		314
100	18,678	696	1,082	2,502	.....	5	2,393	7,974	.....	.....		315
20	7,740	420	522	770	.....	24	2,081	3,619	.....	.....		316
286	4,695	239	123	375	.....	5	265	3,005	.....	.....		317
70	39,306	1,749	556	6,545	157	472	3,196	11,344	5,470	.....		318
.....	150	40	24	78	.....	.....	.....	.....	.....	.....		319
373	28,100	834	177	6,213	.....	129	3,790	7,925	135	.....		320
69	19,073	773	134	1,929	.....	16	1,948	4,925	92	.....		321
7	2,860	190	117	457	.....	7	.....	1,121	.....	.....		322
113	20,573	711	240	2,349	.....	21	3,746	4,555	1,742	.....		323
142	8,946	493	250	1,162	58	138	1,108	2,709	1,292	100		324
*1,678	53,534	481	471	5,842	.....	193	2,035	7,961	7,239	4,705		325
124	16,701	768	423	2,946	.....	61	3,544	6,118	.....	.....		326
432	13,062	723	672	2,256	250	63	1,865	5,416	.....	.....		327
3	2,707	276	98	532	.....	96	.....	1,214	.....	.....		328
.....	1,438	282	35	8	.....	5	.....	545	.....	202		329
67	10,351	658	220	2,007	.....	184	1,497	3,267	.....	83		330
383	10,591	929	807	1,362	136	34	.....	459	.....	698		331
36	24,301	995	241	3,477	.....	467	2,455	6,121	.....	5,716		332
344	24,754	1,312	569	1,841	.....	120	3,734	11,761	2,408	.....		333
6	14,960	1,248	142	1,634	.....	10	5,326	3,219	37	.....		334
62	8,752	681	81	878	.....	.....	2,128	3,121	.....	.....		335
.....	1,431	132	14	41	75	25	.....	1,005	.....	.....		336
413	17,408	592	160	5,159	.....	5	3,693	5,022	478	.....		337
1,097	32,685	1,105	471	7,484	.....	62	6,395	5,617	.....	.....		338
459	17,966	818	476	4,037	.....	15	3,199	8,162	.....	.....		339
82	17,137	634	184	3,088	.....	25	.....	2,704	1,048	.....		340
64	14,999	511	212	3,487	.....	10	2,020	4,471	249	.....		341
114	31,402	1,702	228	4,402	.....	64	4,642	9,893	.....	.....		342
52	4,708	360	49	611	.....	107	519	1,478	.....	.....		343
62	1,756	285	103	180	.....	.....	.....	1,025	.....	.....		344
124	3,938	409	116	467	.....	20	75	2,482	.....	110		345
3	5,619	505	156	1,469	.....	45	.....	1,617	.....	61		346
.....	8,108	319	217	463	.....	149	2,189	3,456	.....	.....		347
6	8,198	484	59	763	.....	285	1,040	3,402	.....	.....		348
792	22,712	754	269	4,747	200	239	3,070	5,007	571	567		349
632	29,054	882	495	3,983	370	364	.....	7,161	2,512	.....		350
250	22,202	1,187	593	3,830	.....	52	1,826	5,304	.....	.....		351
73	16,958	868	291	1,948	.....	6	2,995	6,632	.....	.....		352
26	35,558	1,218	596	3,684	1,000	35	4,803	9,416	6,219	954		353
172	37,157	947	1,498	3,039	32	873	2,041	11,526	1,485	.....		354
42	3,827	279	136	252	.....	50	401	2,132	.....	.....		355
75	16,875	768	333	1,429	.....	91	3,447	7,742	.....	.....		356
170	19,960	562	150	3,758	.....	331	5,221	6,207	.....	.....		357
107	13,759	747	538	995	.....	27	2,093	5,628	482	25		358
95	17,664	540	415	4,223	.....	10	2,758	4,528	693	.....		359
12	9,352	415	87	1,910	.....	22	1,604	2,511	28	.....		360
97	14,396	813	182	2,933	.....	133	2,000	3,746	660	.....		361
2	9,255	750	274	871	.....	42	1,834	3,212	.....	.....		362
12	2,910	303	141	147	.....	34	157	1,192	.....	.....		363
.....	1,175	169	32	12	.....	15	.....	666	.....	.....		364

* Including $1,263 premiums on debentures sold.

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
313. Monck	200		63	19	4,463	1,586	1,232
314. Monmouth		400	42	136	2,012	411	1,945
315. Mono	87	2,950	92	140	17,921	757	
316. Montague			2	69	7,507	233	2,189
317. Monteagle and Herschel	293		121	79	4,505	190	3,878
318. Moore	5,161	78	941	710	36,379	2,927	8,852
319. Morley					142	8	
320. Mornington	2,848	3,100	1,317	721	27,189	911	
321. Morris	600	400	113	*4,465	15,395	3,678	583
322. Morrison		120		125	2,137	723	773
323. Mosa	1,031	3,945	289	408	19,037	1,536	7,488
324. Moulton		1,387	176	73	8,946		
325. Mountain	283	7,273	282	†16,769	53,534		429
326. Mulmer		2,100	56	286	16,302	399	1,730
327. Murray		750	17	362	12,374	688	1,337
328. Muskoka				38	2,254	455	850
329. Nairn, Hyman and Lorne					1,077	361	2,402
330. Nassagaweya				218	8,134	2,217	1,901
331. Neebing		4,000	588	963	9,976	615	8,159
332. Nelson		2,576	63	199	22,310	1,991	572
333. Nepean	1,351		944	714	24,754		19,876
334. Niagara		2,500	50	398	14,564	396	2,324
335. Nichol	556		130	129	7,704	1,048	3,589
336. Nipissing	85		45	9	1,431		226
337. Nissouri E	183	500	264	352	16,408	1,000	19
338. Nissouri W		6,324	78	273	27,809	4,876	1,334
339. Normanby		225		261	17,193	773	13
340. Norwich N		2,700	26	133	10,542	6,595	726
341. Norwich S	149	1,800	58	329	13,296	1,703	28
342. Nottawasaga	80	2,000	33	142	23,186	8,216	628
343. Oakland	600	125	150	43	4,042	666	58
344. Oakley				32	1,625	131	141
345. Olden				223	3,902	36	1,341
346. Oliver	44	900	183	624	5,604	15	1,935
347. Oneida				184	6,977	1,131	
348. Onondaga	797	200	124	203	7,357	841	76
349. Ops	509	1,000	308	335	17,576	5,136	104
350. Orford	1,410	8,000	411	262	25,850	3,204	3,235
351. Orillia	310	7,500	261	535	21,398	804	2,027
352. Oro				68	12,803	4,155	2,281
353. Osgoode	1,979	2,742	991	1,337	34,974	584	
354. Osnabruck	2,203	10,867	1,616	312	36,439	718	3,345
355. Oso				190	3,440	387	1,264
356. Osprey	333	1,100	129	154	15,526	1,349	1,372
357. Otonabee				72	16,301	3,659	5,362
358. Oxford-on-Rideau		2,000	98	84	12,717	1,042	1,348
359. Oxford, E	251		102	380	13,900	3,764	355
360. Oxford, N	863		137	294	7,871	1,481	2
361. Oxford, W	1,080		212	275	12,034	2,362	262
362. Pakenham	976		718	160	8,837	418	2,374
363. Palmerston and Canonto	100		65	429	2,568	342	594
364. Papineau		120	6		1,020	155	617

* Including $4,360 paid Tp. of Grey *re* Lamon Drain.
† Including $16,500 paid to Winchester Tp. *as* share of drainage debt.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	1,820	4,638	82	1,820	900	.....	2,802	313
215	1,006	3,577	1,928	800	.....	18	2,746	314
.....	613	1,370	.....	613	.....	35	648	315
.....	1,000	3,422	100	.....	1,200	1,212	2,572	316
.....	1,032	5,100	2,768	1,032	.....	390	4,190	317
.....	26,485	38,264	4,177	24,279	.....	6,136	34,592	318
.....	.....	8	.....	.....	162	.....	162	319
.....	3,359	4,270	.....	30,846	.....	.....	30,846	320
.....	2,770	7,031	2,361	6,035	.....	.....	8,396	321
.....	245	1,741	901	.....	125	34	1,060	322
.....	301	9,325	3,743	3,739	3,558	765	11,805	323
4,212	.....	4,212	.....	.....	2,096	.....	2,096	324
4,705	9,546	14,680	2,459	18,299	11,025	5,193	36,976	325
.....	600	2,729	605	.....	.....	.....	605	326
.....	2,250	4,275	2,086	.....	.....	50	2,136	327
.....	.....	1,303	637	.....	.....	140	777	328
341	.....	3,104	.....	.....	.....	.....	.....	329
9,124	1,200	14,442	.....	.....	.....	139	139	330
3,456	1,909	14,139	422	12,000	2,386	370	15,178	331
27,119	3,148	32,830	.....	.....	.....	.....	.....	332
9,500	9,959	39,335	9,937	17,771	626	108	28,442	333
.....	115	2,835	2,661	.....	.....	84	2,745	334
.....	2,954	7,591	2,154	2,835	.....	209	5,198	335
.....	1,532	1,758	.....	1,436	.....	36	1,472	336
.....	5,351	6,370	.....	4,976	.....	172	5,148	337
.....	360	6,570	4,390	.....	.....	640	5,030	338
.....	1,490	2,276	.....	.....	.....	.....	.....	339
.....	250	7,571	4,387	1,282	.....	64	5,733	340
.....	2,632	4,363	.....	377	.....	200	577	341
.....	1,588	10,432	6,442	573	.....	.....	7,015	342
4,544	2,900	8,168	.....	2,400	800	.....	3,200	343
.....	475	747	.....	475	.....	.....	475	344
.....	1,000	2,377	829	.....	.....	135	964	345
1,652	2,754	6,356	.....	3,314	489	.....	3,803	346
.....	650	1,781	.....	.....	.....	.....	.....	347
.....	3,967	4,884	.....	2,202	.....	.....	2,202	348
1,635	4,095	10,970	3,090	7,379	.....	1,635	12,104	349
.....	8,221	14,660	4,340	9,445	.....	1,024	14,809	350
.....	3,323	6,154	2,171	2,372	.....	248	4,791	351
.....	1,856	8,292	3,490	.....	.....	35	3,525	352
15,954	6,920	23,458	4,183	14,269	3,700	.....	22,152	353
.....	4,662	8,725	2,015	20,238	10,500	1,590	34,343	354
.....	530	2,181	564	.....	.....	18	582	355
.....	2,125	4,846	32	2,125	1,000	500	3,657	356
.....	3,000	12,021	5,653	.....	.....	689	6,342	357
473	6,000	8,863	2,181	832	.....	.....	3,013	358
.....	2,999	7,118	2	2,014	.....	1,176	3,192	359
.....	886	2,369	.....	983	.....	2,249	3,232	360
.....	1,745	4,369	.....	2,963	.....	1,095	4,058	361
.....	2,700	5,492	.....	16,770	.....	.....	16,770	362
.....	202	1,138	542	1,200	.....	.....	1,742	363
.....	5	777	438	.....	66	33	537	364

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Township. Municipalities and Counties in which located.	Receipts, 1903. Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
365. Peel, Wellington	319	19,604	252			4,587	
366. Pelee Island, Essex	1,937	10,095	32		84	9,000	7,000
367. Pelham, Welland	60	11,146	25	6,351	1,112	300	
368. Pembroke, Renfrew		2,262				353	
369. Percy, Northumberland	147	13,248	274			3,100	
370. Perry, Parry Sound	1,766	2,774	120				
371. Petewawa, Renfrew	430	1,551	15				
372. Pickering, Ontario	1,687	28,036	388			7,300	900
373. Pilkington, Wellington	138	7,191	65			600	
374. Pittsburg, Frontenac	4,450	14,467	142		12	2,448	
375. Plantagenet N., Prescott	303	12,117	343				
376. Plantagenet S., Prescott	1,282	10,449	228			500	
377. Plummer Additional, Algoma	1,223	1,420	44			500	
378. Plympton, Lambton	1,675	23,613	105			580	
379. Portland, Frontenac	49	10,658	174	500	21		
380. Prince, Algoma	164	979				100	
381. Proton, Grey	959	12,350	93		47	2,452	1,689
382. Puslinch, Wellington	1,647	12,772	117	846	475		
383. Radcliffe, Renfrew	285	1,000	56				
384. Raglan, Renfrew	221	1,567	4	400			
385. Rainham, Haldimand	728	6,416	151	12	181		
386. Raleigh, Kent		36,065	213		799	8,711	4,480
387. Rama, Ontario	439	3,741	22			1,436	
388. Ramsay, Lanark	2,610	11,324	145		798		
389. Ratter and Dunnett, Nipissing	27	2,365	280			450	
390. Rawdon, Hastings	1,358	13,345	24				
391. Rayside, Algoma	105	1,422	50			1,231	
392. Reach, Ontario	86	18,157	62			6,500	
393. Richmond, Lennox and Addington	68	10,009	42	1,408	817	2,873	
394. Rochester, Essex	1,697	10,521	186		506	2,600	20,107
395. Rolph, Buchanan & Wylie, Renfrew	22	2,687	40		13		
396. Romney, Kent	2,300	16,736			519	7,545	4,153
397. Ross, Renfrew	903	6,096	12				
398. Roxborough, Stormont		17,874	403	7,104	108	8,870	2,347
399. Russell, Russell	11,356	13,932	217		57		3,784
400. Ryde, Muskoka	225	971	4				
401. Ryerson, Parry Sound	891	2,092					
402. St. Edmund's Bruce		335	10				
403. St. Joseph, Algoma	322	2,822	152			265	
404. St. Vincent, Grey	1,578	15,933	12			1,800	
405. Salter, May and 116, Algoma	159	1,588	108	669	14	443	
406. Saltfleet, Wentworth	2,990	17,442	70	1,411	59		
407. Sandfield, Manitoulin	66	700					
408. Sandwich, E., Essex	328	14,507	582			180	3,859
409. Sandwich, S., Essex	569	9,174	130			1,000	
410. Sandwich, W., Essex	221	11,412	550		1	1,801	387
411. Sarawak, Grey	319	5,962	32	1,753	177	1,700	
412. Sarnia, Lambton	513	14,129	65		42		4,575
413. Saugeen, Bruce	1,013	7,077	30		14		
414. Sault Ste Marie, Algoma	2,789	17,278	139		7	9,324	
415. Scarborough, York	1,072	17,845	436		583		
416. Schreiber, Thunder Bay	511	1,890	277			600	6,000

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Miscellaneous.	Total receipts.	Disbursments, 1903. Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of school and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
36	24,798	832	315	4,331	.....	84	5,478	8,973	.....	.....	365
313	28,461	891	191	1,459	.....	.....	150	1,888	6,117	7,077	366
28	19,022	502	283	2,701	284	60	3,349	4,723	.....	6,563	367
.....	2,615	280	72	126	.....	5	.....	1,160	.....	.....	368
44	16,813	586	431	3,342	.....	220	1,762	6,527	.....	.....	369
6	4,666	540	40	502	.....	27	.....	2,071	.....	.....	370
96	2,092	246	60	71	.....	.....	.....	1,012	.....	.....	371
390	38,701	1,416	659	9,378	110	388	5,607	11,184	.....	.....	372
48	8,042	656	264	2,068	.....	35	2,090	2,402	.....	.....	373
2	21,521	632	221	3,976	.....	11	5,124	4,717	152	.....	374
184	12,947	685	231	1,734	.....	56	1,465	6,219	168	.....	375
16	12,475	621	199	543	.....	22	1,275	4,646	321	57	376
4	3,191	178	49	502	.....	146	.....	1,164	.....	.....	377
118	26,091	837	269	6,405	.....	289	5,528	7,692	1,454	.....	378
376	11,778	525	377	1,631	.....	174	3,743	4,119	.....	.....	379
...	1,243	192	72	173	.....	.....	.....	585	.....	.....	380
198	17,788	733	336	2,754	.....	137	2,321	5,650	656	282	381
15	15,872	762	214	2,777	.....	72	1,501	5,578	.....	805	382
24	1,365	87	61	61	.....	.....	81	689	.....	.....	383
44	2,236	203	90	204	.....	.....	102	977	.....	300	384
18	7,506	350	101	940	.....	84	2,109	3,270	.....	12	385
652	50,920	1,354	900	3,571	.....	306	4,636	8,158	8,693	.....	386
* 3,001	8,639	618	183	3,684	.....	15	.....	2,642	32	.....	387
51	14,928	652	257	1,894	.....	95	2,682	5,106	.....	1,050	388
.....	3,122	307	159	99	225	.....	.....	1,550	.....	.....	389
442	15,169	666	189	1,101	.....	147	4,625	6,502	.....	.....	390
.....	2,808	351	106	266	.....	.....	.....	771	.....	.....	391
.....	24,805	826	222	5,057	.....	299	3,471	7,278	.....	.....	392
10	15,227	611	329	2,405	800	177	2,955	4,696	.....	1,867	393
11,895	47,512	888	716	2,802	.....	118	1,000	6,508	10,224	.....	394
.....	2,762	229	62	102	.....	.....	196	1,797	.....	113	395
440	31,693	1,034	238	2,050	.....	56	2,232	3,707	2,343	.....	396
.....	7,011	322	203	1,188	332	46	1,220	3,267	.....	.....	397
357	37,063	849	475	1,789	.....	303	750	7,015	2,790	5,663	398
.....	29,346	758	709	2,380	.....	28	1,308	5,315	7,723	391	399
27	1,227	162	74	103	.....	36	.....	482	.....	.....	400
.....	2,983	300	112	189	.....	5	.....	1,210	.....	.....	401
551	896	192	96	181	.....	15	47	.....	.....	.....	402
.....	3,561	307	103	930	140	55	.....	900	.....	100	403
173	19,496	915	697	4,731	.....	321	.....	6,249	.....	.....	404
.....	2,981	312	59	680	.....	10	.....	1,665	.....	240	405
459	22,431	925	912	4,347	.....	264	4,445	5,446	.....	310	406
17	783	135	29	100	.....	.....	.....	390	.....	.....	407
164	19,620	935	309	1,507	.....	320	1,226	4,636	5,363	.....	408
8	10,881	749	176	1,957	.....	35	1,095	2,463	1,353	.....	409
154	14,526	701	294	2,672	.....	190	1,211	4,825	1,175	.....	410
318	10,261	509	380	3,058	.....	49	514	1,980	270	1,116	411
152	19,476	834	364	2,724	.....	205	1,506	5,401	3,146	.....	412
265	8,399	532	117	2,192	.....	.....	1,389	2,725	.....	.....	413
1,858	31,395	2,218	1,218	8,715	.....	80	.....	7,962	.....	.....	414
154	20,090	1,172	336	5,281	.....	83	3,870	7,266	.....	.....	415
.....	9,278	108	123	19	175	.....	.....	5,600	.....	.....	416

* Including $1,000 from Provincial Government in aid of construction of bridge on Black River and $2,000 from Dominion Government on account of Indian Lands for roads and bridges in township.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures redeemed.	Current Loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
365. Peel	400	4,000	246	139	24,798	.....	100
366. Pelee Island	1,365	5,100	1,577	255	26,070	2,391	9,331
367. Pelham	.....	409	7	63	18,944	78	547
368. Pembroke	.....	930	27	15	2,615	.....	807
369. Percy	100	3,100	105	262	16,435	378	568
370. Perry	203	.....	76	104	3,563	1,103	2,940
371. Petewawa	59	.....	4	24	1,476	616	278
372. Pickering	1,466	5,300	493	528	36,529	2,172	1,807
373. Pilkington	179	.....	99	129	7,922	120	4,885
374. Pittsburg	.....	2,448	43	406	17,730	3,791	1,413
375. Plantagenet N	342	.....	68	1,132	12,100	847	6,251
376. Plantagenet S	110	650	183	*1,827	10,454	2,021	3,577
377. Plummer, Additional	200	500	202	237	3,178	13	107
378. Plympton	2,880	.....	457	280	26,091	.....	5,315
379. Portland	.....	.....	21	778	11,368	410	3,912
380. Prince	.....	.....	2	20	1,044	199	2,295
381. Proton	740	2,452	454	153	16,668	1,120	2,868
382. Puslinch	.....	.....	.....	515	12,224	3,648	1,990
383. Radcliffe	.....	212	10	1	1,202	163	731
384. Raglan	.....	.....	.....	15	1,891	345	1,054
395. Rainham	.....	.....	1	17	6,884	622	.....
386. Raleigh	13,942	3,364	4,382	†1,614	50,920	.....	19,444
387. Rama	.....	1,056	39	53	8,322	317	2,282
388. Ramsay	.....	.....	460	173	12,369	2,559	18
389. Rotter and Dunnett	99	470	106	48	3,063	59	500
390. Rawdon	316	.....	107	66	13,719	1,450	4,932
391. Rayside	.....	1,131	35	20	2,680	128	1,941
392. Reach	.....	7,269	164	198	24,784	21	369
393. Richmond	.....	1,155	38	108	15,141	86	5,121
394. Rochester	2,005	4,600	459	76	29,396	18,116	10,773
395. Rolph, Buchanan and Wylie	.....	.....	56	164	2,719	43	1,849
396. Romney	6,505	8,000	3,417	1,071	30,653	1,040	14,939
397. Ross	100	.....	12	55	6,745	266	481
398. Roxborough	5,313	8,914	2,997	205	37,063	.....	12,132
399. Russell	2,061	.....	1,715	286	22,674	6,672	3,572
400. Ryde	80	.....	27	24	988	239	972
401. Ryerson	114	.....	28	28	1,986	997	1,764
402. St. Edmunds	.....	.....	.....	3	534	362	3,107
403. St. Joseph	276	265	122	33	3,231	330	1,985
404. St. Vincent	349	1,800	216	138	15,416	4,080	220
405. Salter, May and 116	.....	.....	.....	15	2,981	.....	2,275
406. Saltfleet	644	.....	442	459	18,194	4,237	.....
407. Sandfield	.....	.....	.....	5	659	124	304
408. Sandwich E	3,533	.....	661	‡1,126	19,616	4	13,428
409. Sandwich, S	2,320	.....	285	396	10.829	52	8,065
410. Sandwich, W	980	444	74	‖1,559	14,125	401	11,887
411. Sarawak	669	540	714	362	10,161	100	938
412. Sarnia	3,108	.....	989	208	18,485	991	2,858
413. Saugeen	134	.....	7	109	7,205	1,194	5
414. Sault Ste Marie	.....	8,000	400	¶1,629	30,222	1,173	32,711
415. Scarborough	457	.....	435	271	19,171	919	1,641
416. Schreiber	.....	600	21	236	6,882	2,396	199

* Including $1,527 Board of Health. Including $1,249 Board of Health.
† Including $1,034 Board of Health. ‡Including $937 Board of Health.
¶ Including $1,106 for redemption of lands.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES 1903.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	35	135	.....	2,848	587	45	3,480	365
7,077	37,450	56,249	837	27,341	8,667	.....	36,845	366
18,212	4,660	23,497	.....	.....	.....	99	99	367
.....	200	1,007	448	.....	353	.....	801	368
.....	8,693	9,639	.....	233	.....	19	252	369
.....	1,168	5,211	2,347	1,052	.....	54	3,453	370
.....	31	925	151	31	.....	.....	182	371
.....	4,670	8,649	.....	4,470	4,924	.....	9,394	372
.....	2,061	7,066	3,762	2,021	615	445	6,843	373
.....	2,515	7,719	5,219	.....	.....	249	5,468	374
.....	2,199	9,297	4,933	1,334	.....	2,168	8,435	375
57	1,650	7,305	3,733	964	1,400	611	6,708	376
.....	4,200	4,320	1,084	3,600	.....	.....	4,684	377
.....	3,275	8,590	599	7,077	580	723	8,979	378
1,750	1,000	7,072	3,660	.....	.....	.....	3,660	379
.....	.....	2,494	.....	.....	100	.....	100	380
2,157	4,757	10,902	.....	8,828	181	90	9,099	381
10,112	2,500	18,250	3,038	.....	.....	130	3,168	382
.....	.....	894	591	.....	.....	220	811	383
300	.....	1,699	1,083	.....	.....	303	1,386	384
4,652	750	6,024	.....	.....	415	.....	415	385
.....	64,463	83,907	235	71,875	8,711	7,358	88,179	386
.....	800	3,399	872	.....	1,218	65	2,155	387
12,342	500	15,419	364	11,500	.....	.....	11,864	388
.....	1,472	2,031	415	1,247	.....	.....	1,662	389
.....	3,014	9,396	4,958	1,794	.....	60	6,812	390
.....	640	2,709	813	.....	763	.....	1,576	391
.....	2,697	3,087	.....	.....	87	310	397	392
17,954	3,182	26,343	3,127	.....	2,718	.....	5,845	393
.....	3,645	32,534	1,261	25,587	.....	4	26,852	394
420	1,087	3,399	1,498	1,400	.....	202	3,100	395
.....	6,155	22,134	1,923	46,814	2,225	678	51,640	396
.....	1,300	2,047	.....	100	.....	.....	100	397
5,663	822	18,617	3,662	67,813	7,815	3,226	82,516	398
2,173	1,260	13,677	1,473	45,593	.....	609	47,675	399
.....	2,466	3 677	600	366	.....	100	1,066	400
.....	337	3,098	1,478	337	.....	85	1,900	401
.....	.....	3,469	1,150	.....	.....	531	1,681	402
300	2,387	5,002	1,043	1,607	.....	134	2,784	403
.....	3,812	8,112	2,702	3,806	.....	77	6,585	404
640	1,500	4,415	.....	1,500	443	150	2,093	405
7,845	4,155	16,237	.....	8,206	.....	.....	8,206	406
.....	.....	428	444	.....	.....	2	446	407
.....	1,279	14,711	6,060	10,485	3,180	46	19,771	408
.....	1,075	9,192	4,271	3,201	1,000	.....	8,472	409
.....	1,000	13,288	6,469	2,003	1,892	1,468	11,832	410
7,414	4,329	12,781	.....	13,248	1,400	413	15,061	411
.....	14,647	18,496	40	22,420	.....	.....	22,460	412
.....	27	1,226	23	.....	.....	138	161	413
.....	690	34,574	17,353	.....	7,000	3,007	27,360	414
13,129	8,418	24,107	.....	7,308	.....	.....	7,308	415
.....	6,175	8,770	.....	6,000	.....	.....	6,000	416

STATISTICS OF ONTARIO

RECEIPTS AND DISBURSEMENTS,

Township Municipalities and County in which located.	Receipts, 1903.						
	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
417. Scott, Ontario	675	10,148	33	.....	227	2,000	.....
418. Scugog, Ontario	171	2,163	21	.....	.....	.....	.....
419. Sebastopol, Renfrew	333	1,866	7	.....	.....	.....	.....
420. Seneca, Haldimand	1,377	8,902	132	.....	18	.....	.....
421. Seymour, Northumberland	1,138	16,439	13	.....	14	6,775	.....
422. Sheffield, Lennox and Addington	508	7,811	112	.....	.....	.....	.....
423. Sherbourne, McClintock, etc., Hal'on	254	1,071	101	.....	.....	300	.....
424. Sherbrooke, Haldimand	93	1,451	12	684	66	.....	.....
425. Sherbrooke, S., Lanark	79	2,322	45	.....	.....	.....	.....
426. Shuniah, Thunder Bay	770	2,765	.....	.....	53	1,923	.....
427. Sidney, Hastings	.....	19,065	154	.....	.....	1,400	.....
428. Smith, Peterborough	2,242	12,390	111	.....	90	.....	.....
429. Snowdon, Haliburton	.....	2,342	.....	.....	.....	300	.....
430. Sombra, Lambton	2,159	20,840	326	.....	23	.....	5,775
431. Somerville, Victoria	184	7,421	68	.....	348	1,500	3,000
432. Sophiasburg, Prince Edward	438	7,806	57	160	103	400	.....
433. Southwold, Elgin	6,337	23,507	189	.....	12	4,000	.....
434. Springer, Nipissing	328	3,054	2	.....	.....	3,950	.....
435. Stafford, Renfrew	445	2,643	2	.....	.....	.....	.....
436. Stamford, Welland	14	12,017	281	.....	19	4,000	.....
437. Stanhope, Haliburton	444	936	.....	.....	3	.....	.....
438. Stanley, Huron	362	12,132	96	2,348	40	1,400	.....
439. Stephen, Huron	646	15,437	390	.....	12	2,180	.....
440. Stephenson, Muskoka	249	3,898	139	.....	24	515	.....
441. Stisted, Muskoka	66	2,022	8	630	20	.....	.....
442. Storrington, Frontenac	3	8,659	26	.....	.....	.....	.....
443. Strong, Parry Sound	649	2,039	1	.....	.....	.....	.....
444. Sullivan, Grey	.....	13,532	25	.....	.....	2,600	.....
445. Sunnidale, Simcoe	643	9,797	160	.....	.....	2,000	.....
446. Sydenham, Grey	767	15,759	74	.....	.....	.....	.....
447. Tarentorus, Algoma	.....	1,057	.....	.....	.....	4,000	.....
448. Tay, Simcoe	842	12,397	99	.....	120	.....	.....
449. Tecumseth, Simcoe	3,829	19,109	180	688	42	2,013	.....
450. Tehkummah, Manitoulin	126	2,471	2	.....	.....	.....	.....
451. Thessalon, Algoma	255	1,507	.....	.....	.....	.....	.....
452. Thorah, Ontario	58	7,915	71	1,491	1,519	4,000	.....
453. Thorold, Welland	600	8,104	91	.....	.....	500	.....
454. Thurlow, Hastings	436	17,497	124	.....	.....	700	.....
455. Tilbury E., Kent	2,894	29,938	.....	.....	273	.....	23,787
456. Tilbury N., Essex	3,834	10,195	146	.....	76	.....	1,998
457. Tilbury W., Essex	5,267	14,709	339	.....	83	.....	8,614
458. Tiny, Simcoe	.....	13,015	30	.....	.....	1,450	.....
459. Torbolton, Carleton	1,176	3,611	.....	.....	.....	.....	.....
460. Toronto, Peel	927	22,664	306	14,016	1,281	3,000	.....
461. Toronto Gore, Peel	351	5,756	48	3	146	965	.....
462. Tossorontio, Simcoe	588	6,964	120	.....	.....	.....	.....
463. Townsend, Norfolk	2,021	16,122	108	.....	30	.....	.....
464. Trafalgar, Halton	2,528	23,394	90	.....	2,191	5,500	.....
465. Tuckersmith, Huron	3,372	11,738	60	100	833	.....	.....
466. Tudor and Cashel, Hastings	435	2,473	70	.....	.....	.....	.....
467. Turnberry, Huron	1,979	7,077	23	48	26	.....	.....
468. Tyendinaga, Hastings	1,755	15,922	126	.....	.....	.....	.....

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Miscellaneous.	Total receipts.	Disbursements, 1903.									No.
		Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
34	13,117	799	331	2,093	.....	245	2,094	4,343	.....	.....	417
.....	2,355	160	61	204	.....	20	501	1,188	.....	.....	418
25	2,231	188	56	17	.....	.....	157	1,619	.....	.....	419
2	10,431	490	194	1,251	.....	153	2,718	4,111	.....	.....	420
442	24,821	860	320	9,230	.....	151	2,214	5,188	.....	.....	421
100	8,531	526	241	1,127	.....	93	1,633	3,523	.....	.....	422
146	1,872	316	72	24	171	5	.....	633	.....	.....	423
12	2,318	108	40	6	.....	48	370	978	55	656	424
66	2,512	318	110	207	.....	2	326	1,026	.....	.....	425
.....	5,511	588	276	1,292	.....	20	.....	1,748	.....	53	426
935	21,554	1,213	411	3,566	125	354	8,011	5,141	.....	.....	427
.....	14,833	598	126	2,895	.....	393	4,257	4,358	.....	.....	428
190	2,832	246	82	469	.....	5	.....	1,503	.....	.....	429
150	29,273	1,043	471	4,328	.....	413	1,990	7,210	5,105	.....	430
*3,427	15,948	490	187	4,305	.....	136	492	6,270	.....	711	431
.....	8,964	394	212	848	.....	81	2,005	4,363	.....	120	432
166	34,211	1,161	330	5,476	.....	5	6,210	8,353	1,886	.....	433
700	8,034	273	201	483	.....	.....	.....	1,095	.....	.....	434
19	3,109	212	94	722	.....	.....	.....	1,462	.....	.....	435
221	16,552	514	1,558	2,612	.....	31	3,415	2,869	.....	.....	436
133	1,516	208	58	203	.....	8	69	638	.....	.....	437
461	16,839	670	257	3,186	.....	10	2,445	4,511	3,531	457	438
858	19,523	875	346	4,828	.....	49	2,593	7,316	81	.....	439
55	4,880	352	187	959	.....	.....	.....	2,232	.....	201	440
57	2,803	274	28	249	.....	10	.....	1,122	.....	30	441
84	8,772	388	109	549	13	12	3,931	3,493	.....	.....	442
14	2,703	255	60	396	360	.....	.....	1,251	.....	.....	443
301	16,458	625	127	2,278	.....	312	2,593	6,930	.....	.....	444
362	12,962	933	232	1,702	.....	121	1,650	4,055	.....	.....	445
179	16,779	970	559	4,661	.....	213	2,342	6,575	.....	.....	446
10	5,067	515	256	1,421	.....	.....	.....	250	.....	.....	447
396	13,854	904	308	1,183	.....	137	.....	8,384	.....	.....	448
124	25,985	780	107	5,847	.....	171	4,590	7,158	200	.....	449
.....	2,599	213	52	448	.....	5	.....	853	.....	.....	450
.....	1,762	222	46	352	.....	5	.....	869	.....	.....	451
123	15,177	799	359	5,396	.....	64	987	2,294	50	150	452
501	9,796	561	256	571	.....	21	3,041	3,473	.....	.....	453
630	19,387	650	487	1,531	.....	1,163	5,377	7,415	.....	.....	454
†6,356	63,248	1,447	568	4,113	2,076	274	2,280	5,532	20,997	.....	455
647	16,896	893	400	833	.....	90	1,290	3,287	5,114	.....	456
112	29,124	878	447	3,251	.....	189	1,030	4,499	2,302	.....	457
304	14,799	963	264	952	.....	179	1,965	5,704	181	.....	458
.....	4,787	372	99	743	.....	.....	614	2,096	.....	.....	459
287	42,481	1,244	760	4,491	.....	65	4,591	8,805	.....	14,345	460
32	7,301	529	82	1,336	.....	8	1,348	2,246	.....	8	461
112	7,784	562	193	517	.....	208	1,617	3,483	.....	.....	462
87	18,368	1,021	361	2,153	366	13	4,275	7,479	7	.....	463
73	33,776	1,142	511	7,691	.....	295	7,038	10,092	.....	.....	464
22	16,125	713	260	4,469	.....	12	2,564	4,265	129	100	465
383	3,361	353	107	674	.....	5	188	1,795	.....	.....	466
39	9,192	655	141	969	.....	5	1,223	4,059	.....	.....	467
564	18,367	835	410	1,232	.....	331	5,587	7,324	.....	.....	468

*Including $1,500 grant from county, and $1,620 grant from Ontario Government for Kinmount bridge.
†Including $5,401 refunded to township by county as per Government audit.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures redeemed.	Current Loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
417. Scott	.....	2,000	80	151	12,136	981	48
418. Scugog	.....	.....	.....	6	2,140	215	.....
419. Sebastopol	.....	.....	.....	19	2,056	175	86
420. Seneca	.....	.....	.....	138	9,055	1,376	7
421. Seymour	.....	4,425	147	553	23,088	1,733	168
422. Sheffield	321	.....	304	210	7,978	553	1,352
423. Sherbourne, McClintock, etc.	84	.....	70	223	1,598	274	476
424. Sherbrooke	.....	.....	2	4	2,267	51	154
425. Sherbrooke, S.	.....	.....	.....	87	2,076	436	551
426. Shuniah	.....	235	375	295	4,882	629	5,941
427. Sidney	281	2,094	92	88	21,376	178	12,427
428. Smith	700	.....	75	12	13,414	1,419	1,760
429. Snowdon	48	354	23	61	2,791	41	1,778
430. Sombra	6,394	.....	1,196	413	28,563	710	24,008
431. Somerville	610	1,500	794	177	15,672	276	5,920
432. Sophiasburg	.....	400	5	199	8,627	337	434
433. Southwold	776	4,000	169	406	28,772	5,439	3,170
434. Springer	469	4,280	236	869	7,906	128	2,888
435. Stafford	.....	.....	.....	15	2,505	604	668
436. Stamford	394	3,000	306	717	15,416	1,136	3,485
437. Stanhope	29	.....	12	5	1,230	286	891
438. Stanley	.....	500	7	260	15,834	1,005	971
439. Stephen	432	2,180	198	566	19,464	59	96
440. Stephenson	.....	775	103	71	4,880	.....	2,047
441. Stisted	510	.....	60	217	2,500	303	638
442. Storrington	230	.....	44	1	8,770	2	1,615
443. Strong	.....	.....	.....	17	2,339	364	1,549
444. Sullivan	50	2,671	89	321	15,996	462	361
445. Sunnidale	267	2,000	258	91	11,309	1,653	1,231
446. Sydenham	74	.....	73	104	15,571	1,208	36
447. Tarentorus	.....	2,000	32	534	5,010	57	4,718
448. Tay	475	.....	147	*1,206	12,744	1,110	10,678
449. Tecumseth	353	2,013	372	108	21,699	4,286	153
450. Tehkummah	.....	.....	.....	8	1,579	1,020	125
451. Thessalon	.....	133	.....	45	1,672	90	1,092
452. Thorah	1,000	3,000	429	540	15,068	109	490
453. Thorold	.....	1,014	18	104	9,059	737	3,320
454. Thurlow	.....	700	14	417	17,754	1,633	5,610
455. Tilbury E.	11,512	3,550	6,412	444	59,205	4,043	33,984
456. Tilbury N.	2,880	.....	1,447	523	16,757	139	8,795
457. Tilbury W.	5,345	6,000	1,367	339	25,647	3,477	15,302
458. Tiny	848	1,503	1,935	305	14,799	.....	5,844
459. Torbolton	.....	.....	.....	68	3,992	795	1,538
460. Toronto	385	3,000	164	1,203	39,053	3,428	.....
461. Toronto Gore	217	965	110	77	6,926	375	8
462. Tossorontio	.....	.....	.....	48	6,628	1,156	51
463. Townsend	125	.....	29	292	16,121	2,247	244
464. Trafalgar	400	5,500	367	737	33,773	3	1,749
465. Tuckersmith	863	678	145	144	14,342	1,783	386
466. Tudor and Cashel	.....	.....	.....	.....	3,122	239	2,955
467. Turnberry	.....	.....	.....	55	7,107	2,085	834
468. Tyendinaga	.....	.....	.....	88	15,807	2,560	1,399

* Including $1,137 Board of Health.

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

December 31st, 1903.			Liabilities on December 31st, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
4,761	940	6,730	.....	585	.....	.....	585	417
.....	1,498	1,713	.....	.....	.....	122	122	418
.....	.....	261	125	.....	.....	25	150	419
.....	2,000	3,383	.....	.....	.....	.....	.....	420
.....	942	2,843	.....	.....	2,350	1,175	3,525	421
.....	2,000	3,905	.....	7,288	.....	604	7,892	422
.....	2,457	3,207	300	1,057	300	483	2,140	423
1,864	500	2,569	.....	.....	.....	.....	.....	424
.....	.....	987	109	.....	.....	.....	109	425
2,203	1,541	10,314	.....	7,500	1,688	142	9,330	426
.....	1,000	13,605	10,608	.....	.....	.....	10,608	427
.....	1,301	4,480	248	1,301	.....	144	1,693	428
.....	401	2,220	1,187	101	.....	.....	1,288	429
.....	33,332	58,050	5,875	29,836	.....	4,179	39,890	430
8,306	3,530	18,032	2,574	13,190	.....	75	15,839	431
3,521	3,500	7,792	.....	.....	.....	442	442	432
.....	3,508	12,117	5,395	1,402	.....	954	7,751	433
.....	1,383	4,399	1,280	2,752	1,079	350	5,461	434
.....	600	1,872	605	.....	.....	149	754	435
.....	10,735	15,356	4,236	4,563	1,000	96	9,895	436
.....	172	1,349	577	172	.....	45	794	437
457	1,925	3,478	.....	.....	900	298	1,198	438
.....	3,904	4,059	.....	2,835	.....	7	2,842	439
1,035	1,401	4,483	576	1,190	528	397	2,691	440
210	792	1,943	.....	450	.....	.....	450	441
.....	1,750	3,367	718	750	.....	.....	1,468	442
.....	401	2,314	831	.....	.....	.....	831	443
.....	2,100	2,923	.....	350	.....	150	500	444
.....	1,991	4,875	2,538	4,129	.....	175	6,842	445
.....	776	2,020	.....	251	.....	.....	251	446
.....	2,175	6,950	.....	.....	2,000	405	2,405	447
.....	2,585	14,373	4,115	2,510	.....	300	6,925	448
.....	8,013	12,452	.....	8,013	.....	.....	8,013	449
.....	200	1,345	576	.....	.....	33	609	450
.....	675	1,857	.....	.....	141	.....	141	451
50,150	1,275	52,024	.....	5,000	1,000	.....	6,000	452
.....	.....	4,057	2,875	.....	.....	358	3,233	453
.....	2,000	9,243	5,774	.....	.....	66	5,840	454
.....	12,758	50,785	6,392	151,783	.....	29,689	187,864	455
.....	3,145	12,079	3,099	27,745	.....	959	31,803	456
.....	7,143	25,922	1,213	31,917	.....	.....	33,130	457
.....	5,057	10,901	.....	45,158	1,450	.....	46,608	458
.....	.....	2,333	1,675	.....	.....	171	1,846	459
28,366	3,685	35,479	.....	1,510	.....	.....	1,510	460
3,508	1,015	4,906	.....	2,075	.....	40	2,115	461
.....	100	1,307	.....	.....	.....	.....	.....	462
.....	3,965	6,456	308	365	.....	.....	673	463
45,173	6 452	53,377	1,658	1,600	.....	420	3,678	464
17,683	100	19,952	.....	2,693	.....	.....	2,693	465
.....	.....	3,194	1,793	.....	.....	20	1,813	466
.....	157	3,076	1,482	.....	.....	147	1,629	467
.....	1,634	5,593	.....	.....	.....	544	544	468

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Township Municipalities and County in which located.	Receipts, 1903.						
	Balance from 1902.	Municipal and school taxes.	License fees, rents, fines, etc.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.
	$	$	$	$	$	$	$
469. Usborne, Huron	4,571	12,593	21	.....	.....	.....	.....
470. Uxbridge, Ontario	.....	10,962	94	....	372	2,814	.....
471. Van Horne, Rainy River	369	868	51	.....	.....	.....	.....
472. Vaughan, York	8,357	24,845	472	15,414	1,542	.....	.....
473. Verulam, Victoria	4,157	9,866	22	.....	139	250	.....
474. Vespra, Simcoe	2,106	13,286	4	.....	.....	.....	.....
475. Wainfleet, Welland	430	13,912	229	.....	845	.....	2,294
476. Wallace, Perth	122	11,406	16	5,786	294	827	.....
477. Walpole, Haldimand	2,146	21,289	184	.....	29	1,482	.....
478. Walsingham N., Norfolk	2,723	8,344	56	.....	.....	600	.....
479. Walsingham S., Norfolk	746	10,731	42	.....	14	1,591	.....
480. Warwick, Lambton	134	17,200	6	.....	.....	3,987	340
481. Waterloo, Waterloo	.....	28,116	325	8,236	1,428	.....	.....
482. Waters, Algoma	.....	232	.....	.....	.....	50	.....
483. Watt, Muskoka	315	2,634	10	186	.....	200	600
484. Wawanosh E., Huron	2,186	7,804	47	.....	10	900	.....
485. Wawanosh W., Huron	712	10,183	.....	.....	4	950	.....
486. Wellesley, Waterloo	1,166	22,875	471	6,150	560	.....	.....
487. Westmeath, Renfrew	23	12,145	131	.....	.....	.....	.....
488. Westminster, Middlesex	8,319	26,032	161	.....	39	5,365	.....
489. Whitby E., Ontario	479	12,279	200	.....	160	2,250	1,250
490. Whitby, Ontario	802	13,461	128	60	.....	5,030	.....
491. Whitchurch, York	1,807	14,668	67	190	603	1,500	.....
492. Widdifield, Nipissing	114	2,443	38	.....	.....	2,100	.....
493. Wilberforce and Algona N., Renfrew	647	5,376	56	.....	.....	.....	.....
494. Williams E., Middlesex	4,789	11,766	20	.....	33	494	.....
495. Williams W., Middlesex	2,854	8,440	.....	.....	.....	1,650	.....
496. Williamsburg, Dundas	7,468	18,775	3	.....	.....	.....	.....
497. Willoughby, Welland	166	4,803	106	.....	.....	.....	2,000
498. Wilmot, Waterloo	4,115	22,957	485	.....	.....	.....	.....
499. Winchester, Dundas	47,698	27,666	.....	.....	1,288	2,500	891
500. Windham, Norfolk	2,070	12,812	75	.....	.....	.....	.....
501. Wolfe Island, Frontenac	278	10,187	58	.....	.....	.....	.....
502. Wolford, Grenville	351	7,307	55	.....	.....	.....	.....
503. Wollaston, Hastings	384	2,153	31	.....	.....	.....	.....
504. Woodhouse, Norfolk	2,792	9,705	25	.....	52	.....	.....
505. Woolwich, Waterloo	1,766	22,475	170	1,160	400	.....	.....
506. Yarmouth, Elgin	971	29,760	139	.....	3	10,000	.....
507. Yonge and Escott Front, Leeds	102	15,465	162	.....	224	1,500	.....
508. Yonge and Escott Rear, Leeds	1,040	6,320	78	.....	212	.....	.....
509. York, York	274	89,790	811	15,244	2,048	.....	15,120
510. Zone, Kent	1,038	6,649	5	.....	22	3,000	3,924
511. Zorra E., Oxford	6,863	26,843	367	.....	111	4,000	713
512. Zorra W., Oxford	11,340	17,873	11	5,500	455	1,536	916

TOWNSHIP MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Miscellaneous.	Total Receipts.	Disbursements, 1903. Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
22	17,207	531	112	4,732	.....	30	2,216	4,590	547	.....	469
173	14,415	898	400	1,871	.....	413	1,497	4,029	.....	1,232	470
148	1,436	218	90	39	.....	20	.....	300	.....	.....	471
131	50,761	1,453	563	8,458	.....	13	.....	9.779	.....	15,414	472
53	14,487	491	208	1,200	.....	18	1,508	4,367	.....	1,340	473
50	15,446	763	345	2,051	.....	57	1,978	6,434	351	.....	474
769	18,479	866	287	1,042	.....	.....	6,076	6,150	1,949	.....	475
554	19,005	799	305	2,344	.....	83	1,110	4,829	102	6,718	476
43	25,173	846	240	4,299	.....	718	5,721	8,820	.....	.....	477
12	11,735	488	226	3,353	.....	9	1 350	3,189	43	.....	478
386	13,510	663	345	2,230	98	16	1,305	4,306	.....	.....	479
183	21,850	638	319	3,989	.....	96	3,347	7,038	329	.....	480
24	38,129	1,481	575	3,102	.....	23	5,559	15,153	.....	8,009	481
.....	282	77	22	14	.....	.....	.....	100	.....	.....	482
16	3,961	250	152	598	.....	10	.....	2,136	.....	.....	483
45	10,992	569	155	1,786	.....	7	1,424	3,756	.....	.....	484
33	11,882	694	143	2,032	.....	25	1,571	3,736	218	.....	485
97	31,319	1,022	380	4,982	.....	.....	4,011	12,244	.....	6,262	486
16	12,315	677	157	3,079	.....	123	1,627	4,908	136	.....	487
332	40,248	1,429	604	8,482	250	90	7,292	7,873	33	.....	488
75	16,693	789	84	3,167	.....	236	2,547	6,642	.....	.....	489
4	19,485	814	206	4,163	5 80	88	2,496	4,430	.....	.....	490
9	18,844	818	86	1,889	.....	51	3,226	9,008	.....	328	491
.....	4,695	443	138	526	.....	35	.....	1,608	.....	.....	492
.....	6,079	390	109	647	.....	6	773	2,962	25	.....	493
108	17,210	477	141	2,718	.....	73	3,770	3,493	142	.....	494
113	13,057	460	156	2,024	36	30	2,807	2,607	179	.....	495
717	26,963	528	387	3,316	.....	264	2,823	7,067	5,323	2,274	496
106	7,181	216	123	2,484	.....	5	1,658	1,662	2	.....	497
394	27,951	1,307	323	3,411	.....	5	4,118	10,661	.....	362	498
*21,731	101,774	655	223	3,250	.....	203	2,508	9,472	16,101	55,935	499
95	15,052	755	385	2,121	.....	62	2,925	6,837	432	.....	500
.....	10,523	466	234	1,414	.....	255	3,231	4,243	.....	.....	501
4	7,717	396	125	799	.....	10	1,486	4,166	.....	.....	502
214	2,782	264	63	335	.....	10	135	1,365	.....	.....	503
32	12,606	579	181	2,750	.....	76	2,055	3,842	.....	.....	504
519	26,490	1,198	314	4,854	.....	5	3,678	9,439	.....	410	505
150	41,023	1,322	2,024	8,747	.....	172	6,095	7,295	33	.....	506
38	17,491	608	274	4,232	.....	50	1,656	5,508	.....	956	507
478	8,128	299	36	520	.....	10	797	3,659	.....	792	508
†8,597	131,884	6,709	3,521	25,415	110	143	10,363	39,595	.....	14,913	509
66	14,704	756	199	2,029	.....	166	899	2,261	2,531	.....	510
160	39,057	1,038	191	14,315	.....	88	4,562	7,891	1,769	.....	511
27	37,658	730	434	3,601	.....	.....	4,611	4,957	3,000	5,500	512

* Including $5,000 grant from Ontario Government and $16,500 from township of Mountain for Perth Castle and Annable Creek drain. † Including $8,078 proceeds of sale of township property.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Townships.	Disbursements, 1903.—*Continued.*					Assets on	
	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.
	$	$	$	$	$	$	$
469. Usborne	.....	.....	.....	42	12,800	4,407	56
470. Uxbridge	200	2,411	1,205	259	14,415	.....	1,185
471. Van Horne	.....	200	24	40	931	505	930
472. Vaughan	.....	.....	.....	307	35,987	14,774	378
473. Verulam	78	250	183	59	9,702	4,785	.....
474. Vespra	363	.....	129	33	12,504	2,942	1,410
475. Wainfleet	1,229	.....	165	482	18,246	233	3,056
476. Wallace	.....	1,465	911	106	18,772	233	4,122
477. Walpole	300	1,482	108	809	23,343	1,830	6
478. Walsingham N	.....	720	8	93	9,479	2,256	2,131
479. Walsingham S	2,516	1,162	695	174	13,510	.....	1,006
480. Warwick	480	4,813	233	173	21,455	395	359
481. Waterloo	1,455	.....	565	537	36,459	1,670	.....
482. Waters	.....	.....	.....	.....	213	69	365
483. Watt	200	.....	21	29	3,396	565	590
484. Wawanosh E	.....	900	18	103	8,718	2,274	176
485. Wawanosh W	876	950	132	242	10,619	1,263	700
486. Wellesley	124	.... ..	158	660	29,843	1,476	382
487. Westmeath	1,219	.....	130	206	12,262	53	.....
488. Westminster	150	5,365	187	258	32,013	8,235	3,262
489. Whitby E	104	2,250	89	125	16,033	660	.....
490. Whitby	1,318	4,450	129	346	19,020	465	95
491. Whitchureh	.....	3,000	.....	432	18,838	6	1,241
492. Widdifield	.....	1,600	66	256	4,672	23	4,408
493. Wilberforce and Algona N	120	.....	64	93	5,189	890	1,787
494. Williams E	.....	494	6	36	11,350	5,860	430
495. Williams W	.....	1,650	27	49	10,025	3,032	1,093
496. Williamsburg	2,487	.....	776	201	25,446	1,517	30
497. Willoughby	101	125	43	17	6,436	745	1,722
498. Wilmot	472	.....	197	*1,309	22,165	5,786	.....
499. Winchester	6,169	2,375	2,997	514	100,402	1,372	1,300
500. Windham	.....	.....	.....	62	13,579	1,473	3,246
501. Wolfe Island	.....	.....	.....	280	10,123	400	3,327
502. Wolford	.....	.....	.....	102	7,084	633	1,435
503. Wollaston	.....	.....	.....	462	2,634	148	1,545
504. Woodhouse	.....	.....	.....	179	9,662	2,944	90
505. Woolwich	2,659	.....	937	251	23,745	2,745	3
506. Yarmouth	551	13,000	400	476	40,115	908	1,165
507. Yonge and Escott Front	.....	2,000	670	467	16,421	1,070	105
508. Yonge and Escott Rear	.....	.....	750	35	6,898	1,230	5
509. York	9,214	.....	4,638	†9,969	124,590	7,294	20,825
510. Zone	1,727	1,000	264	‡1,249	13,081	1,623	4,310
511. Zorra E	2,125	4,000	578	168	36,725	2,332	571
512. Zorra W	1,685	3,500	572	232	28,822	8,836	1,008

* Including $1,104 Board of Health. † Including $3,884 arrears of taxes returned to clerk, and $2,694 rebates.
‡ Including $772 Board of Health.

TOWNSHIP MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

December 31, 1903.			Liabilities on December 31, 1903.					
Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	
.....	625	5,088	2,686	.....	.....	120	2,806	469
10,343	1,300	12,828	257	19,000	914	.....	20,171	470
.....	560	1,995	.....	.....	109	60	169	471
35,332	2,748	53,232	5,895	.....	.....	176	6,071	472
4,379	1,328	10,492	2,027	3,588	.....	120	5,735	473
.....	1,600	5,952	2,315	3,406	.....	450	6,171	474
26,000	6,820	36,109	349	4,295	.....	163	4,807	475
7,357	917	12,629	3,485	20,000	.....	65	23,550	476
.....	2,100	3,936	.....	1,500	.....	.....	1,500	477
.....	1,403	5,790	1,764	.....	.....	.....	1,764	478
.....	3,705	4,711	397	11,372	429	.....	12,198	479
.....	3,377	4,131	.....	2,611	.....	289	2,900	480
36,174	6,589	44,433	.....	12,157	.....	.....	12,157	481
.....	.....	434	100	.....	50	14	164	482
.....	700	1,855	689	700	.....	78	1,467	483
.....	.....	2,450	1,726	.....	.....	.....	1,726	484
.....	2,973	4,936	1,904	1,910	.....	114	3,928	485
12,723	3,827	18,408	.....	3,827	.....	.....	3,827	486
.....	1,313	1,366	.....	1,014	.....	.....	1,014	487
.....	600	12,097	7,285	600	.....	.....	7,885	488
3,200	2,993	6,853	.....	1,146	.....	90	1,236	489
.....	1,030	1,590	41	.....	580	214	835	490
14,371	663	16,281	.....	.....	.....	614	614	491
.....	390	4,821	1,288	.....	750	5	2,043	492
.....	1,260	3,937	1,094	1,080	.....	179	2,353	493
.....	.....	6,290	3,767	.....	.....	250	4,017	494
.....	729	4,854	2,809	.....	.....	545	3,354	495
3,722	3,142	8,411	.....	15,994	.....	3,722	19,716	496
.....	3,208	5,675	945	2,501	.....	94	3,540	497
362	4,390	10,538	.....	3,010	.....	362	3,372	498
55,935	4,660	63,267	.....	67,837	125	93	68,055	499
.....	2,584	7,303	.....	.....	.....	.....	.....	500
.....	2,362	6,089	3,082	.....	.....	60	3,142	501
.....	825	2,893	1,548	.....	.....	42	1,590	502
.....	1,000	2,693	798	.....	.....	45	843	503
.....	.....	3,034	.....	.....	.....	.....	.....	504
8,416	150	11,314	.....	18,702	.....	.....	18,702	505
.....	3,011	5,084	1,065	3,672	1,000	711	6,448	506
8,860	2,150	12,185	11	8,788	3,000	.....	11,799	507
11,929	2,000	15,164	.....	15,000	.....	.....	15,000	508
32,575	87,678	148,372	19,793	82,844	7,697	4,808	115,142	509
.....	1,622	7,555	1,998	6,899	3,000	.....	11,897	510
.....	4,622	7,525	.....	12,197	.....	2,216	14,413	511
14,541	1,137	25,522	.....	8,876	7,561	.....	16,437	512

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS

Receipts, 1903.

Village Municipalities and Counties in which located.	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$	$	$	$
1. Acton, Halton	533	6,222	413	2,176	551	55	2,000
2. Ailsa Craig, Middlesex	.....	3,098	233	.....	.....	.....	.....
3. Alvinston, Lambton	.....	5,175	514	.....	.....	15	32,020
4. Arkona, Lambton	175	1,354	366	.....	.....	.....	4,332
5. Arthur, Wellington	.....	7,435	623	.....	.....	233	6,039
6. Ashburnham, Peterborough	.....	9,018	870	790	.....	87	1,250
7. Athens, Leeds	370	3,945	114	.....	700	13	.....
8. Ayr, Waterloo	170	4,900	186	.....	.....	.....	.....
9. Bath, Lennox and Addington	394	2,014	151	.....	.....	60	300
10. Bayfield, Huron	177	1,336	137	.....	.....	.....	.....
11. Beamsville, Lincoln	1,502	4,063	298	411	.....	.....	2,000
12. Beaverton, Ontario	849	2,763	100	.....	.....	265	700
13. Beeton, Simcoe	1,958	4,263	274	2,413	.....	24	500
14. Belle River, Essex	170	1,763	223	.....	.....	.....	550
15. Blyth, Huron	1,996	4,987	418	.....	400	52	2,125
16. Bobcaygeon, Victoria	4,034	4,386	261	.....	.....	.....	.....
17. Bolton, Peel	118	2,921	201	.....	.....	.....	4,295
18. Bradford, Simcoe	1,919	4,795	377	.....	.....	.....	.....
19. Bridgeburg, Welland	200	10,981	129	1,148	10,824	65	2,500
20. Brighton, Northumberland	2,115	7,053	303	.....	.....	.....	1,668
21. Brussels, Huron	2,691	7,880	965	.....	2,895	574	.....
22. Burk's Falls, Parry Sound	2,653	4,122	206	.....	665	59	.....
23. Burlington, Halton	856	5,291	278	.....	.....	110	1,500
24. Caledonia, Haldimand	1,164	4,338	525	.....	.....	.....	1,600
25. Campbellford, Northumberland	1	15,044	855	5,346	231	78	6,500
26. Cannington, Ontario	.....	4,398	322	.....	.....	.....	3,009
27. Cardinal, Grenville	722	4,843	489	.....	.....	.....	3,057
28. Casselman, Russell	199	2,340	56	.....	.....	110	100
29. Cayuga, Haldimand	368	3,743	303	.....	.....	6	31,401
30. Chesley, Bruce	4,149	10,201	993	.....	421	107	4,034
31. Chesterville, Dundas	.....	4,465	271	.....	.....	.....	7,307
32. Chippewa, Welland	1,682	1,794	361	.....	.....	27	.....
33. Clifford, Wellington	902	2,165	257	.....	822	17	4,406
34. Cobden, Renfrew	467	2,433	114	.....	.....	.....	5,500
35. Colborne, Northumberland	495	5,235	142	.....	.....	.....	1,800
36. Creemore, Simcoe	30	3,275	169	.....	.....	.....	700
37. Delhi, Norfolk	1,330	2,881	149	.....	.....	15	.....
38. Drayton, Wellington	3,405	4,953	706	.....	.....	50	3,766
39. Dundalk, Grey	.....	4,099	396	1,909	.....	.....	3,198
40. Dutton, Elgin	250	4,786	314	.....	.....	.....	1,000
41. Eganville, Renfrew	25	2,932	457	.....	2,259	.....	65
42. Elmira, Waterloo	1,334	4,698	171	.....	.....	.....	15,000
43. Elora, Wellington	1,851	7,672	600	.....	500	18	.....
44. Embro, Oxford	1,235	3,017	230	.....	.....	.....	1,500
45. Erin, Wellington	134	1,664	193	.....	.....	.....	450
46. Exeter, Huron	2,967	8,955	574	308	.....	.....	4,700
47. Fenelon Falls, Victoria	1,152	4,796	587	1,325	.....	261	.....
48. Fergus, Wellington	680	12,071	906	.....	782	63	761
49. Fort Erie, Welland	941	4,482	340	.....	.....	.....	1,800
50. Garden Island, Frontenac	720	1,645	.....	.....	.....	.....	.....

MUNICIPALITIES, 1903.

ASSETS AND LIABILITIES, 1903.

Receipts.—*Continued.*			Disbursements, 1903.								
Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, e c.	Charities.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	281	12,231	682	2,404	220	25	411	.....	20	357	1
.....	43	3,374	150	321	117	31	449	.....	52	237	2
7,500	662	45,886	339	960	372	12	1,750	.....	87	265	3
.....	80	6,307	280	.....	138	8	3,874	.....	2	135	4
6,824	317	21,471	365	640	368	54	4,367	.....	16	495	5
.....	47	12,062	624	2,147	292	100	1,519	284	117	1,095	6
.....	8	5,150	157	57	144	50	1,067	225	3	233	7
.....	.....	5,256	183	418	174	6	248	.....	4	371	8
.....	4	2,923	174	41	67	14	170	.....	96	300	9
.....	52	1,702	142	.....	109	21	358	.....	10	107	10
3,000	1,013	12,287	512	418	168	20	261	218	17	378	11
.....	.....	4,677	253	340	258	34	647	15	57	351	12
.....	209	9,641	563	*2,396	390	16	1,216	325	45	.....	13
1,500	10	4,216	126	.....	123	6	674	310	.....	78	14
.....	.....	9,978	417	766	208	113	331	.....	7	153	15
.....	76	8,757	125	162	168	307	613	90	.....	261	16
5,000	218	12,753	178	13	127	74	4,452	.....	35	137	17
.....	223	7,314	621	479	175	40	913	360	35	427	18
8,000	251	34,098	310	3,946	757	112	1,137	17,974	133	1,082	19
.....	613	11,752	324	716	268	60	1,857	807	160	641	20
5,000	7	20,012	506	543	330	120	588	.....	5	246	21
1,471	973	10,149	297	726	260	47	469	.....	11	.....	22
1,554	9	9,598	723	947	289	30	1,935	.....	221	443	23
.....	49	7,676	273	12	132	77	413	.....	1	324	24
12,000	599	40,654	800	‡4,312	516	384	1,068	401	156	1,881	25
.....	1	7,730	312	588	254	37	1,007	.....	17	499	26
.....	81	9,192	192	672	186	54	2,379	.....	38	256	27
.....	44	2,849	177	.....	146	12	213	.....	.....	145	28
8,000	257	44,078	375	113	377	6	5,212	.....	62	250	29
10,167	704	30,776	283	993	795	350	3,215	200	27	581	30
6,000	.....	18,043	146	74	97	11	904	.....	20	188	31
.....	.....	3,864	148	25	90	13	777	.....	.....	250	32
.....	63	8,632	104	70	210	26	3,419	.....	15	284	33
.....	56	8,570	104	.....	268	28	3,370	.....	.....	230	34
.....	143	7,815	239	822	470	55	1,050	53	18	439	35
.....	5	4,179	179	163	102	.....	1,644	.....	2	.....	36
.....	11	4,386	145	112	173	11	299	.....	45	300	37
.....	196	13,076	246	292	350	42	236	3,985	11	344	38
.....	3	9,605	490	2,381	205	7	1,955	.....	70	123	39
.....	156	6,506	184	305	360	10	1,006	.....	4	300	40
3,000	9	8,747	446	170	134	12	4,411	1,131	5	412	41
.....	103	21,306	198	243	131	53	1,240	.....	5	394	42
.....	484	11,125	349	554	234	418	226	.....	16	560	43
1,960	159	8,101	173	150	269	52	2,112	.....	15	325	44
.....	119	2,560	95	243	58	33	282	535	.....	240	45
2,069	937	20,510	671	1,702	611	23	3,344	.....	83	449	46
39,060	286	47,407	352	584	627	212	865	37,490	103	376	47
.....	484	15,747	563	1,074	595	363	2,093	.....	155	1,634	48
.....	.....	7,563	260	178	260	15	1,541	.....	5	597	49
.....	.....	2,365	25	.....	14	.....	141	.....	.....	325	50

* Including $1,758 cost of supplying light and power to private citizens.
‡ Including cost of supplying light to private residences.
† Waterworks and Electric Light.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Villages.	Disbursements 1903.—*Continued.*							Balance on hand.
	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current Loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	
	$	$	$	$	$	$	$	$
1. Acton	2,500	729	260	2,551	1,290	173	11,622	609
2. Ailsa Craig	1,014	.....	168	273	239	270	3,321	53
3. Alvinston	1,902	.....	326	38,763	282	79	45,137	749
4. Arkona	508	.....	.....	602	.....	14	5,561	746
5. Arthur	2,765	.....	994	9,358	1,334	597	21,353	118
6. Ashburnham	3,038	487	.....	1,237	973	149	12,062	.....
7. Athens	419	263	.....	.....	.....	479	3,097	2,053
8. Ayr	1,800	337	530	.....	776	167	5,014	242
9. Bath	1,235	.....	.....	300	11	28	2,436	487
10. Bayfield	729	.....	.....	.....	.....	65	1,541	161
11. Beamsville	1,986	3,067	280	2,800	649	99	10,873	1,414
12. Beaverton	.....	364	.....	1,100	214	25	3,658	1,019
13. Beeton	1,352	.....	1,191	500	1,163	177	9,334	307
14. Belle River	668	.....	.....	271	13	†1,643	3,912	304
15. Blyth	1,155	202	1,286	2,125	1,439	170	8,372	1,606
16. Bobcaygeon	1,600	874	.....	.....	150	88	4,438	4,319
17. Bolton	1,057	1,856	.....	4,500	72	221	12,722	31
18. Bradford	1,400	.....	419	.....	128	158	5,155	2,159
19. Bridgeburg	2,537	.....	1,159	2,500	1,654	387	33,688	410
20. Brighton	3,800	.....	425	1,668	287	405	11,418	334
21. Brussels	1,717	9,556	884	.....	2,337	231	17,063	2,949
22. Burk's Falls	1,640	1,550	951	.....	1,264	389	7,604	2,545
23. Burlington	1,762	.....	308	1,500	81	135	8,374	1,224
24. Caledonia	1,954	.....	500	1,600	350	141	5,777	1,899
25. Campbellford	4,816	1,240	3,040	6,630	2,908	‡2,447	40,599	55
26. Cannington	1,500	.....	439	2,787	155	135	7,730	.....
27. Cardinal	1,790	.....	197	2,400	124	432	8,720	472
28. Casselman	485	178	.....	.....	181	235	1,772	1,077
29. Cayuga	1,650	8,000	587	26,552	370	498	44,052	26
30. Chesley	2,887	805	623	13,426	1,734	1,498	27,417	3,359
31. Chesterville	9,400	.....	320	6,381	134	162	17,837	206
32. Chippewa	950	.....	140	.....	185	37	2,615	1,249
33. Clifford	977	.....	.....	1,000	22	145	6,272	2,360
34. Cobden	4,046	.....	100	.....	48	7	8,201	369
35. Colborne	2,230	.....	.....	1,800	37	233	7,446	369
36. Creemore	858	.....	.....	700	15	53	3,716	463
37. Delhi	1,715	.....	.....	.....	.....	282	3,082	1,304
38. Drayton	2,594	.....	548	3,500	696	232	13,076	.....
39. Dundalk	500	.....	488	2,716	347	323	9,605	.....
40. Dutton	1,490	.....	557	1,000	410	170	5,796	710
41. Eganville	1,287	.....	46	65	4	36	8,159	588
42. Elmira	1,552	10,000	959	5,000	664	311	20,750	556
43. Elora	2,727	.....	1,975	.....	812	746	8,617	2,508
44. Embro	1,314	.....	173	1,500	124	93	6,300	1,801
45. Erin	500	.....	.....	450	10	84	2,530	30
46. Exeter	2,507	656	1,232	4,000	988	2,089	18,355	2,155
47. Fenelon Falls	2,713	2,195	.....	.....	.....	1,486	47,003	404
48. Fergus	5,205	298	1,298	500	562	429	14,769	978
49. Fort Erie	1,200	.....	493	1,700	480	*452	7,181	382
50. Garden Island	901	.....	.....	.....	.....	563	1,969	396

† Including $1,500 bonus to flax mill.
‡ Including $12,000 bonus to shoe factory.
* Including $405, Board of Health Expenses re Smallpox visitation.

MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

Assets on December 31, 1903.					Liabilities on December 31, 1903.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
751	5,399	10,000	21,489	38,248	350	27,216	.....	.....	27,566	1
70	108	.....	1,455	1,686	.....	4,832	.....	5	4,837	2
763	.....	1,400	4,450	7,362	.....	7,500	.....	.....	7,500	3
.....	.....	.....	1,105	1,851	.....	.....	3,730	.....	3,730	4
785	.....	.....	7,199	8,102	751	19,625	3,188	205	23,769	5
336	*2,785	10,610	6,325	20,056	.....	19,500	†1,250	192	20,942	6
450	263	.....	1,741	4,507	1,190	.....	1,000	280	2,470	7
361	**6,183	.....	5,125	11,911	.....	14,776	.....	.....	14,776	8
83	2,000	.....	1,725	4,295	375	.....	.....	.....	375	9
22	.....	.....	860	1,043	.....	.....	.....	.....	.....	10
340	3,067	15,000	3,414	23,235	410	14,695	260	1,794	17,159	11
260	§3,549	.....	‖8,810	13,638	962	3,500	1,170	.....	5,632	12
59	.....	36,535	7,544	44,445	324	23,523	.....	65	23,912	13
442	.....	.....	800	1,546	96	1,500	568	14	2,178	14
203	7,112	600	15,441	24,962	1,139	26,646	.....	.....	27,785	15
.....	3,736	580	5,777	14,412	2,211	3,000	.....	‡1,272	6,483	16
.....	1,856	.....	1,515	3,402	.....	5,000	.....	200	5,200	17
1,263	.....	.....	8,700	12,122	2,027	2,158	.....	150	4,335	18
471	.....	39,404	5,387	45,672	2,140	39,589	.....	4,217	45,946	19
.....	.....	140	10,817	11,291	1,400	4,168	.....	.....	5,568	20
575	19,670	.....	6,750	29,944	.....	57,598	.....	.....	57,598	21
109	19,556	.....	3,103	25,313	2,200	25,985	.....	852	29,037	22
261	2,000	1,300	6,850	11,635	.....	1,554	.....	.....	1,554	23
464	.....	.....	6,200	8,563	.....	4,000	1,000	.....	5,000	24
308	1,240	34,000	8,192	43,795	.....	47,165	.....	204	47,369	25
784	.....	.....	8,710	9,494	.....	1,456	752	.....	2,208	26
820	.....	.....	3,948	5,240	266	2,281	700	144	3,391	27
446	596	.....	500	2,619	200	2,000	1,378	.....	3,578	28
189	8,000	.....	7,100	15,315	.....	8,613	9,500	1,075	19,188	29
433	1,257	.....	30,930	35,979	.....	37,950	5,789	.....	43,739	30
118	.....	.....	1,675	1,999	.....	6,339	1,819	24	8,182	31
101	500	.....	9,150	11,000	980	3,726	500	250	5,456	32
477	.....	.....	4,175	7,012	.....	.....	3,406	416	3,822	33
351	.....	.....	3,210	3,930	128	1,100	7,175	.....	8,403	34
.....	.....	.....	4,340	4,709	.....	.....	.....	.....	.....	35
1,315	.....	.....	90	1,868	1,224	.....	.....	.....	1,224	36
596	.....	.....	100	2,000	955	.....	.....	1,400	2,355	37
222	.....	.....	16,427	16,649	348	13,418	266	550	14,582	38
88	.....	6,500	2,357	8,945	497	4,287	1,198	¶1,449	7,431	39
1,404	.....	.....	6,979	9,093	810	7,915	.....	198	8,923	40
.....	.....	.....	5,447	6,035	1,601	3,000	.....	.....	4,601	41
.....	10,000	.....	800	11,356	.....	12,373	10,000	.....	22,373	42
3,600	4,000	.....	13,167	23,275	2,594	14,521	.....	.....	17,115	43
21	.....	.....	7,018	8,840	1,234	5,270	.....	77	6,581	44
1	.....	.....	1,000	1,031	.....	.....	.....	.....	.....	45
102	3,151	2,800	12,750	20,958	2,829	20,018	700	.....	23,547	46
3,311	2,195	39,000	5,550	50,460	1,947	39,000	.....	200	41,147	47
1,642	1,553	.....	18,595	22,768	98	6,444	1,036	491	8,069	48
718	.....	.....	9,930	11,030	1,300	5,703	1,800	33	8,836	49
.....	.....	.....	.....	396	.....	.....	.....	.....	.....	50

* Omitting $1,550 written off per report of special auditors. ** Omitting $78 previously overstated.
§ Including $1,000 stock in wharf. ‖ Including $7,890 interest in G.T.R. elevator.
† Omitting $1,550 previously returned as due S. F., but now written off per report of special auditors.
‡ Railway bonus coupons. ¶ Payable to Proton Township re school debentures.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Village Municipalities and Counties in which located.	Receipts, 1903. Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$	$	$	$
51. Georgetown, Halton	.....	7,740	408	2,355	500	.....	5,712
52. Glencoe, Middlesex	100	7,590	642	.....	.....	.....	1,550
53. Grand Valley, Dufferin	966	3,462	275	.....	.....	33	600
54. Grimsby, Lincoln	72	5,115	117	.....	1,605	.....	1,504
55. Hagersville, Haldimand	276	4,316	172	.....	.....	.....	1,600
56. Hanover, Grey	2,430	6,977	226	429	.....	.....	1,900
57. Hastings, Northumberland	310	3,048	430	.....	.....	.....	500
58. Havelock, Peterborough	137	3,308	439	.....	.....	.....	1,800
59. Hensall, Huron	776	3,317	159	.....	.....	80	1,052
60. Hintonburg, Carleton	145	8,165	141	4,218	.....	51	6,206
61. Holland Landing, York	.....	778	51	.....	.....	.....	400
62. Iroquois, Dundas	1,361	6,880	453	2,482	300	.....	42,555
63. Kemptville, Grenville	46	8,310	583	.....	250	.....	2,000
64. Lakefield, Peterborough	544	6,439	484	.....	314	249	2,400
65. Lanark, Lanark	700	4,615	303	.....	.....	.....	1,275
66. Lancaster, Glengarry	479	1,556	282	.....	.....	.....	765
67. L'Orignal, Prescott	227	2,200	211	.....	.....	.....	.....
68. Lucan, Middlesex	114	4,731	301	.....	.....	225	1,200
69. Lucknow, Bruce	2,218	6,082	528	.....	499	369	.....
70. Madoc, Hastings	.....	7,018	571	.....	.....	.....	1,001
71. Markdale, Grey	597	3,778	480	.....	.....	.....	3,200
72. Markham, York	1,578	7,219	143	1,220	168	98	.....
73. Marmora, Hastings	7	3,599	318	.....	.....	2	.....
74. Maxville, Glengarry	777	1,602	163	.....	.....	.....	.....
75. Merrickville, Grenville	53	6,255	235	.....	.....	.....	3,690
76. Merritton, Lincoln	1,663	15,310	669	2,999	.....	85	.....
77. Millbrook, Durham	655	3,583	716	.....	.....	.....	900
78. Milverton, Perth	.....	2,913	231	.....	.....	.....	1,200
79. Morrisburg, Dundas	.....	11,999	552	4,702	.....	.....	1,500
80. Newboro', Leeds	863	1,773	68	.....	.....	117	.....
81. Newburg, Lennox and Addington	90	3,652	23	.....	.....	.....	.....
82. Newbury, Middlesex	216	1,448	128	.....	.....	.....	2,364
83. Newcastle, Durham	1,368	2,200	119	.....	.....	.....	.....
84. New Hamburg, Waterloo	.....	13,216	450	.....	.....	.....	1,624
85. Niagara Falls South, Welland	112	8,610	181	1,642	.....	12	5,000
86. Norwich, Oxford	2,985	9,042	340	.....	1,510	76	4,400
87. Norwood, Peterborough	313	5,314	165	.....	.....	275	2,625
88. Oil Springs, Lambton	.....	5,472	357	.....	.....	.....	4,197
89. Omemee, Victoria	151	2,513	207	.....	.....	.....	1,200
90. Ottawa East, Carleton	623	6,130	136	.....	.....	43	.....
91. Paisley, Bruce	2,628	5,590	1,090	.....	.....	.....	3,525
92. Point Edward, Lambton	1,657	4,106	214	.....	.....	.....	1,700
93. Port Carling, Muskoka	697	1,623	101	.....	.....	.....	300
94. Port Colborne, Welland	1,395	5,595	353	1,516	.....	29	182
95. Port Dalhousie, Lincoln	3,157	5,095	*1,866	.....	.....	.....	1,500
96. Port Dover, Norfolk	1,076	6,304	305	.....	.....	.....	1,500
97. Port Elgin, Bruce	.....	7,210	771	.....	4,477	294	5,300
98. Port Perry, Ontario	915	11,737	544	.....	.....	142	5,200
99. Port Rowan, Norfolk	.....	3,149	101	.....	.....	.....	2,715
100. Port Stanley, Elgin	175	2,778	239	.....	.....	.....	2,200

*Including $1,060 hydraulic rent.

MUNICIPALITIES.—*Continued*

ASSETS AND LIABILITIES, 1903.

Receipts.—*Continued*.			Disbursements, 1903.									
Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
3,500	84	20,299	447	1,012	349	.....	3,325	50	69	423	51
1,020	81	10,983	423	924	260	226	1,413	.....	22	596	52
.....	.....	5,336	155	246	174	42	1,134	.....	53	195	53
.....	182	8,595	189	635	307	10	402	.....	28	458	54
684	.....	7,048	516	237	193	28	1,079	684	28	280	55
.....	85	12,047	296	1,738	563	22	388	727	17	385	56
.....	553	4,841	207	461	230	99	632	.....	114	262	57
.....	7	5,694	411	2	154	13	596	.....	9	.....	58
7,731	12	13,127	143	332	105	18	779	.....	5	200	59
10,000	286	29,212	923	3,474	638	474	2,926	1,846	10	.....	60
.....	.....	1,229	118	.....	38	.....	146	.....	.....	139	61
24,740	161	78,962	159	1,438	379	49	2,066	7,335	112	707	62
.....	*3,750	14,939	387	885	150	145	1,323	.....	149	416	63
1,502	100	12,032	370	584	199	204	418	221	32	1,263	64
†2,900	8	9,801	384	540	199	145	279	3,000	41	415	65
.....	113	3,195	90	75	92	13	516	.....	33	118	66
.....	.....	2,638	190	19	9	.....	765	.....	.....	237	67
3,866	280	10,717	148	243	130	27	1,722	.....	8	176	68
.....	137	9,833	286	1,714	184	59	708	.....	15	347	69
.....	90	8,680	381	487	354	64	663	67	336	758	70
.....	485	8,540	445	235	235	20	2,185	.....	7	280	71
.....	374	10,800	181	2,726	388	26	1,245	.....	3	430	72
1,100	237	5,263	201	244	98	44	1,375	.....	51	430	73
.....	23	2,565	120	14	162	8	679	228	14	95	74
4,500	7	14,740	317	790	260	10	1,000	4,539	15	333	75
.....	203	20,929	1,316	3,394	571	15	2,612	.....	103	1,139	76
.....	213	6,067	305	559	213	27	1,298	.....	75	280	77
.....	44	4,388	182	165	190	34	747	.....	.....	194	78
.....	58	18,811	732	2,454	388	57	2,009	1,793	254	737	79
.....	32	2,853	85	.....	15	8	281	.....	.....	125	80
.....	.....	3,765	267	20	85	10	458	.....	37	319	81
.....	51	4,207	134	.....	86	11	2,929	.....	.....	149	82
.....	5	3,692	220	125	144	79	586	.....	12	.....	83
**471	110	15,871	369	904	275	8	4,249	.....	7	464	84
6,000	22	21,579	275	3,218	510	114	3,404	742	69	436	85
2,707	1,303	22,363	401	1,389	336	276	3,479	.....	25	533	86
.....	2	8,694	188	610	88	129	727	.....	162	577	87
1,500	234	11,760	388	416	287	56	1,751	.....	121	280	88
.....	.....	4,071	156	178	206	49	606	.....	30	199	89
10,000	100	17,032	287	148	214	25	1,018	8,402	.....	546	90
2,400	139	15,372	314	887	587	321	2,451	.....	6	356	91
2,000	128	9,805	619	352	1,063	50	1,345	77	35	175	92
.....	45	2,766	121	.....	118	3	479	.....	15	.....	93
.....	.....	9,070	688	968	218	31	2,097	188	34	562	94
.....	.....	11,618	258	217	87	493	1,964	.....	25	.....	95
.....	172	9,357	272	381	140	38	2,055	.....	30	450	96
14,550	§5,148	37,730	583	602	270	8	6,631	100	.....	421	97
.....	95	18,633	650	610	188	112	1,659	.....	133	711	98
.....	41	6,006	133	316	137	12	650	.....	10	255	99
.....	27	5,419	341	82	370	50	992	.....	62	364	100

* Mortgage from Kemptville Milling Co. † Being amount of rental note for fire engine—treated as a debenture.
**Being balance of bonus debentures, omitted from returns in 1902.
§Including $4,879 received from Harness Co. as security for fulfilment of contract.

STATISTICS OF ONTARIO
RECEIPTS, DISBURSEMENTS.

Disbursements, 1903.—*Continued.*

Villages.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.
	$	$	$	$	$	$	$	$
1. Georgetown	3,399		1,833	6,044	2,965	383	20,299	
2. Glencoe	1,895		1,021	3,170	537	262	10,749	234
3. Grand Valley	1,691		186	600	227	570	5,273	63
4. Grimsby	3,527		325	2,100	272	362	8,595	
55. Hagersville	1,590		432	1,600	235	133	7,035	13
56. Hanover	1,811		782	1,900	1,484	58	10,171	1,876
57. Hastings	1,490			900	112	20	4,527	314
58. Havelock	1,317		122	2,305	235	363	5,527	164
59. Hensall	1,100		279	8,860	645	661	13,127	
60. Hintonburg	4,009	3,118	2,276	3,091	4,762	1,559	29,106	106
61. Holland Landing	470			166	4	19	1,100	129
62. Iroquois	3,067	40	2,317	54,410	3,276	917	76,272	2,660
63. Kemptville	1,900	3,750	1,790	2,000	1,071	343	14,309	630
64. Lakefield	3,166	1,230	225	2,400	1,123	329	11,764	268
65. Lanark	2,000		567	1,275	276	121	9,242	559
66. Lancaster	683			1,350	17	119	3,106	89
67. L'Orignal	1,366					34	2,620	18
68. Lucan	2,330	483	280	3,889	801	280	10,517	200
69. Lucknow	2,070	1,460	249		1,259	366	8,717	1,116
70. Madoc	2,577		1,009	1,264	705	15	8,680	
71. Markdale	932		775	1,200	529	449	7,292	1,248
72. Markham	1,632		1,119		440	36	8,226	2,574
73. Marmora	2,464				16	307	5,230	33
74. Maxville	1,168					5	2,493	72
75. Merrickville	2,023	17	851	3,690	412	321	14,578	162
76. Merriton	3,727	102	811		2,683	200	16,673	4,256
77. Millbrook	1,112		300	900	172	605	5,846	221
78. Milverton	900		255	1,339	232	51	4,289	99
79. Morrisburg	4,941		2,109	1,612	1,528	118	18,732	79
80. Newboro'	1,240	257	160		249	33	2,453	400
81. Newburg	1,655		500		25	114	3,490	275
82. Newbury	701			183		14	4,207	
83. Newcastle	2,000		203		56	46	3,471	221
84. New Hamburg	4,047		1,606	1,152	589	*2,201	15,871	
85. Niagara Falls S.	5,356		1,127	1,500	865	†1,733	19,349	2,230
86. Norwich	1,704	1,300	2,094	6,778	1,331	55	19,701	2,662
87. Norwood	1,909	315	154	2,625	554	303	8,341	353
88. Oil Springs	1,691		2,128	2,228	742	§1,672	11,760	
89. Omemee	1,063		35	1,200	57	83	3,862	209
90. Ottawa East	2,793	1,057	297		274	673	15,734	1,298
91. Paisley	1,742		489	3,877	613	509	12,152	3,220
92. Point Edward	1,728		402	2,700	294	105	8,945	860
93. Port Carling	593		51	300	83	183	1,946	820
94. Point Colborne	1,800		1,039		1,260	185	9,070	
95. Port Dalhousie	1,934		889	1,500	774	1,070	9,211	2,407
96. Port Dover	2,761		802	1,500	241	121	8,791	566
97. Port Elgin	3,200	20,062	585	3,269	1,313	592	37,626	94
98. Port Perry	3,726		1,657	7,200	1,574	148	18,368	265
99. Port Rowan	1,400			2,309	68	445	5,735	271
100. Port Stanley	766			1,675	60	116	4,878	541

*Including $351 principal and interest on mortgage, and $638 bonus to brass factory.
†Including $1,359 amalgamation account.
§Including $1,500 bonus to grist mill.

MUNICIPALITIES.—*Continued.*
ASSETS AND LIABILITIES.—*Continued.*

Assets on December 31, 1903.					Liabilities on December 31, 1903.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Water works, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
1,137	9,500	40,000	11,558	62,195	.....	58,748	2,312	.....	61,060	51
496	.....	.....	7,737	8,467	483	10,286	408	.....	11,177	52
23	.....	.....	1,538	1,624	.....	5,338	.....	2,370	7,708	53
466	.....	.....	6,600	7,066	476	6,287	4	156	6,923	54
218	.....	684	1,291	2,206	257	3,364	.....	10	3,631	55
584	.....	26,000	60	28,520	.....	33,772	.....	.....	33,772	56
112	.....	.....	7,800	8,226	.....	.....	1,200	.....	1,200	57
320	.....	.....	4,211	4,695	282	3,044	.....	1,072	4,398	58
9	.....	25	7,955	7,989	.....	7,452	30	.....	7,482	59
15,353	4,972	99,649	13,397	133,477	5,909	108,310	9,475	1,148	124,842	60
574	.....	.....	542	1,245	121	.....	250	62	433	61
585	40	48,750	13,018	65,053	3,111	56,388	8,000	40	67,539	62
2,588	3,500	.....	11,650	18,368	.....	14,441	.....	1,373	15,814	63
2	7,055	.....	10,700	18,025	.....	25,275	.....	157	25,432	64
.....	.....	.....	9,700	10,259	.....	4,915	.....	.....	4,915	65
59	.....	.....	660	808	169	.....	.....	26	195	66
1,331	.....	.....	46	1,395	532	.....	.....	169	701	67
116	5,292	.....	3,700	9,308	176	16,754	.....	.....	16,930	68
2,713	17,113	10,000	5,800	36,742	.....	*26,112	4,076	.....	30,188	69
5,244	.....	.....	5,800	11,044	759	14,776	1,001	.....	16,536	70
220	.....	.....	12,296	13,764	503	12,612	2,000	25	15,140	71
396	4,832	14,100	3,775	25,677	1,457	18,642	.....	572	20,671	72
1,077	.....	.....	122	1,232	407	1,100	.....	25	1,532	73
273	.....	.....	203	548	157	.....	.....	196	353	74
.....	17	.....	7,086	7,265	.....	5,849	.....	.....	5,849	75
532	668	75,000	13,339	93,795	.....	52,755	.....	432	53,187	76
388	.....	.....	*7,568	8,177	310	2,577	.....	149	3,036	77
3	.....	200	.....	302	.....	4,409	.....	.....	4,409	78
26	.....	60,000	4,003	64,108	.....	52,659	.....	914	53,573	79
.....	3,649	.....	1,242	5,291	.....	4,733	.....	.....	4,733	80
2,977	.....	.....	100	3,352	1,739	.....	.....	262	2,001	81
387	.....	.....	.....	387	375	.....	2,364	.....	2,739	82
1,600	.....	.....	4,000	5,821	772	919	.....	.....	1,691	83
.....	2,300	.....	10,860	13,160	.....	8,942	1,624	1,274	11,840	84
1,594	.....	12,000	‡14,145	29,969	.....	19,626	5,000	2,836	27,462	85
1,644	5,088	.....	7,259	16,653	1,304	23,170	1,800	.....	26,274	86
.....	¶6,210	.....	4,436	10,999	.....	9,397	.....	.....	9,397	87
4,818	.....	.....	4,250	9,068	287	9,350	3,697	99	13,439	88
.....	.....	.....	700	900	.....	218	.....	.....	218	89
1,574	1,557	.....	3,668	8,097	.....	13,401	.....	100	13,501	90
423	14,000	.....	20,800	38,443	1,858	15,441	2,025	212	19,536	91
379	.....	.....	1,500	2,739	1,000	11,207	.....	.....	12,207	92
149	.....	.....	30	999	257	1,501	.....	495	2,253	93
118	.....	22,925	17,240	40,283	.....	30,444	182	.....	30,626	94
550	*a*6,500	.....	914	10,371	2,353	16,459	.....	238	19,050	95
936	.....	.....	4,500	6,002	859	3,845	.....	50	4,754	96
1,755	24,064	.....	10,250	36,163	.....	34,834	5,300	74	40,208	97
1,208	.....	.....	13,860	15,333	.....	28,656	3,700	65	32,421	98
220	.....	.....	143	634	.....	.....	450	46	496	99
1,553	.....	.....	1,545	3,639	215	.....	1,325	.....	1,540	100

*Including $68, present worth of Township of Cavan's share of school debentures.
‡Including $12 000 permanent side-walks.
¶In 1903 Sinking Fund items are omitted—the above is computed as the difference between gross and net debenture debts.
a Being for leases of water power.
*Including $1,500 due from 1902, and former years omitted from reports.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Village Municipalities and Counties in which located.	Receipts, 1903. Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$	$	$	$
101. Portsmouth, Frontenac		2,940	72				
102. Richmond, Carleton	37	1,623	112				
103. Richmond, Hill, York	348	2,621	296		21	64	
104. Rockland, Russell	300	2,933	179				
105. Shelburne, Dufferin	1	8,942	514				7,000
106. Southampton, Bruce	4,635	7,803	511	134		164	2,952
107. Springfield, Elgin	60	1,980	48				1,215
108. Stirling, Hastings	386	1,963	161		400	15	2,340
109. Stouffville, York	1,834	5,933	178	460			
110. Streetsville, Peel	1,022	2,199	140				
111. Sturgeon Point, Victoria	170	437				17	25
112. Sundridge, Parry Sound	122	2,307	125				173
113. Sutton, York	443	1,541	143				
114. Tara, Bruce	1,633	3,459	236		500	81	
115. Teeswater, Bruce	1,941	4,569	472		300	84	
116. Thamesville, Kent	1,240	6,124	210				4,700
117. Thedford, Lambton	39	2,186	71				5,675
118. Tilbury, Kent	40	7,446	553	701	954	12	10,817
119. Tiverton, Bruce	719	1,787	143				1,150
120. Tottenham, Simcoe	3,410	5,593	274	*1,132			2,764
121. Tweed, Hastings	709	5,691	416				
122. Vienna, Elgin	313	1,666	121			60	1,229
123. Wardsville, Middlesex	171	1,608	122				
124. Waterdown, Wentworth	39	1,855	145				500
125. Waterford, Norfolk	1,075	6,591	252			12	3,300
126. Watford, Lambton	689	6,760	644		510		3,600
127. Wellington, Prince Edward	29	2,627	209		57		1,775
128. Weston, York	372	8,441	452	1,195		7	
129. Winchester, Dundas	308	6,937	387				2,200
130. Woodbridge, York	56	2,086	201			100	535
131. Woodville, Victoria	438	1,683	80				780
132. Wroxeter, Huron	507	1,720	122				500
133. Wyoming, Lambton	593	2,916	322				2,893
Town Municipalities.							
1. Alexandria, Glengarry	99	9,541	825	4,107			31,353
2. Alliston, Simcoe	3,261	7,161	418	99	100	338	
3. Almonte, Lanark	3,215	17,399	1,266	6,019	513	64	3,625
4. Amherstburg, Essex		16,415	846	3,500		10	43,953
5. Arnprior, Renfrew	1,321	23,410	2,024	2,012		392	31,743
6. Aurora, York	230	10,316	250	1,458		900	6,172
7. Aylmer, Elgin	6,626	25,206	784	6,801			37,693
8. Barrie, Simcoe	2,499	40,757	3,178	18,154	4,292	1,620	659
9. Berlin, Waterloo		80,551	4,338	29,790	71	2,077	24,612
10. Blenheim, Kent	61	11,353	1,243	3,037			19,885
11. Bothwell, Kent	2,426	3,752	1,026	1,436			2,500
12. Bowmanville, Durham	639	29,533	1,971	330	623	113	46,292
13. Bracebridge, Muskoka	38	14,923	1,060	11,476	602	60	8,700
14. Brampton, Peel	469	24,182	803	3,759	755	266	10,600
15. Brockville, Leeds	3,394	102,930	12,080	63,672	64,200	6,325	172,362

* Electric Light and Power rates.

MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

Receipts.—*Continued.*			Disbursements, 1903.								
Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	3	3,015	308	.....	172	83	420	.....	.....	.....	101
2,500	128	4,400	118	.....	476	10	685	.....	15	1,647	102
.....	16	3,366	166	150	149	50	735	.....	8	270	103
.....	6	3,418	345	7	76	65	256	.....	.....	300	104
731	292	17,480	361	1,327	460	290	4,581	49	22	810	105
10,650	148	26,997	312	844	328	80	466	5,096	31	457	106
.....	12	3,315	280	61	151	9	705	.....	.....	.....	107
.....	141	5,406	184	435	149	7	575	8	232	327	108
.....	56	8,461	248	420	143	15	2,350	.....	53	484	109
.....	...	3,361	294	153	76	16	176	.....	.....	144	110
.....	.....	649	58	.....	69	....	48	316	....	25	111
.....	101	2,828	91	.....	113	10	216	23	3	.....	112
.....	5	2,132	131	102	173	12	385	.....	22	199	113
.....	155	6,064	161	.....	152	35	1,013	.....	30	228	114
.....	162	7,528	299	1,084	174	4	588	.....	31	333	115
.....	178	12,452	166	734	383	143	2,576	.....	68	.....	116
2,920	23	10,914	109	80	186	20	5,449	.....	39	153	117
1,007	173	21,703	438	1,649	223	376	1,111	500	6	246	118
.....	22	3,821	104	.....	117	17	571	.....	5	127	119
.....	17	13,190	380	1,112	415	11	123	5,409	.....	535	120
2,500	90	9,406	290	180	958	173	1,643	.....	20	648	121
1,100	385	4,874	126	.....	128	7	1,615	.....	23	120	122
.....	142	2,043	117	17	48	2	559	.....	2	112	123
.....	19	2,558	133	22	91	24	1,099	.....	12	323	124
.....	257	11,487	446	128	190	22	3,577	264	8	450	125
.....	148	12,351	529	614	213	9	715	.....	5	353	126
.....	35	4,732	152	721	113	.....	311	.....	20	179	127
.....	172	10,639	1,060	1,935	288	110	1,620	.....	37	475	128
.....	458	10,290	144	665	132	32	2,107	284	7	257	129
.....	302	3,280	183	67	85	26	947	.....	6	182	130
3,500	2	6,183	108	30	126	22	235	1,480	55	176	131
.....	188	3,037	188	252	59	1	241	.....	80	88	132
2,201	121	9,046	271	173	134	9	3,233	.....	25	207	133
.....	70	45,995	637	5,512	858	190	1,609	1,643	67	249	1
.....	.....	11,377	601	671	202	205	1,716	.....	18	665	2
7,500	581	40,182	1,247	4,100	873	629	5,079	2,889	76	1,988	3
.....	93	64,817	955	3,183	1,062	399	3,676	2,820	130	609	4
10,877	611	72,390	1,011	2,796	923	860	1,728	5,169	26	1,319	5
10,000	78	29,404	270	1,744	900	12	1,628	78	28	709	6
3,300	154	80,564	620	9,380	751	428	2,783	17,682	21	900	7
25,535	360	97,054	1,536	18,543	1,659	1,216	17,207	7,463	984	2,579	8
148,602	18,331	308,372	3,510	27,215	2,602	1,983	29,113	117,512	1,190	4,161	9
1,471	353	37,403	520	4,436	1,107	304	4,246	250	25	648	10
2,001	149	13,290	591	1,871	330	13	2,262	508	129	222	11
10,000	6,195	95,696	1,254	3,751	828	1,264	2,570	8,636	178	1,322	12
22,000	2,053	60,912	995	4,231	1,605	1,206	4,534	5,569	262	.....	13
5,316	459	46,609	954	2,183	825	580	7,763	1,336	133	997	14
37,536	796	463,295	3,832	59,250	4,785	7,740	16,319	39,006	2,070	.....	15

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Villages.	Disbursements, 1903.—*Continued.*							
	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.
	$	$	$	$	$	$	$	$
101. Portsmouth	871			213		2	2,069	946
102. Richmond	687	205	59		166	164	4,282	168
103. Richmond Hill	1,217		61		123	105	3,034	332
104. Rockland	850			500	56	109	2,564	854
105. Shelburne	3,617		1,801	2,000	1,501	519	17,338	142
106. Southampton	6,090		1,200	2,952	1,864	887	20,607	6,390
107. Springfield	499		95	750	95	166	2,811	504
108. Stirling	1,308		500	1,602	53	26	5,406	
109. Stouffville	1,600		968		1,122	443	7,846	615
110. Streetsville	1,085					171	2,115	1,246
111. Sturgeon Point	40				15	78	649	
112. Sundridge	860	173			399	382	2,270	558
113. Sutton	680					60	1,764	368
114. Tara	1,349		778		386	163	4,295	1,769
115. Teeswater	1,667	909	160		676	66	5,991	1,537
116. Thamesville	1,242		270	4,700	161	534	10,977	1,475
117. Thedford	816		140	3,424	256	20	10,692	222
118. Tilbury	1,802	774	2,973	10,006	1,500	75	21,679	24
119. Tiverton	1,200		1,500		38	60	3,739	82
120. Tottenham	600		489	3,310	480	110	12,974	216
121. Tweed	3,723		467		724	451	9,277	129
122. Vienna	719	113		1,229	166	73	4,319	555
123. Wardsville	830			61	25	34	1,807	236
124. Waterdown	770					22	2,496	62
125. Waterford	2,171		170	3,300	148	262	11,136	351
126. Watford	2,400	710	771	2,600	611	216	10,746	1,605
127. Wellington	740		200	1,875	223	120	4,654	78
128. Weston	2,117		972		739	124	9,477	1,162
129. Winchester	1,759		1,117	2,700	610	153	9,967	323
130. Woodbridge	745		156	535	316	18	3,266	14
131. Woodville	468			780	9	323	3,812	2,671
132. Wroxeter	558			900	40	287	2,694	343
133. Wyoming	1,550		257	2,893	101	186	9,039	7
Town Municipalities.								
1. Alexandria	2,568		1,011	29,013	2,570	68	45,995	
2. Alliston	1,431	1,448	790		2,243	167	10,157	1,220
3. Almonte	6,827	1,194	3,436	3,625	3,969	463	36,395	3,787
4. Amherstburg	8,242		3,313	35,156	4,612	660	64,817	
5. Arnprior	10,073	3,501	3,104	35,299	5,660	537	72,006	384
6. Aurora	3,225		2,188	16,150	2,259	213	29,404	
7. Aylmer	5,275		8,331	26,643	5,137	2,613	80,564	
8. Barrie	12,885	2,547	10,517	2,722	11,696	1,782	93,330	3,724
9. Berlin	34,568		17,025	22,501	17,018	29,974	308,372	
10. Blenheim	3,156		1,922	16,815	1,595	312	35,336	2,067
11. Bothwell	1,575		1,006	2,300	586	192	11,585	1,705
12. Bowmanville	6,795		3,695	58,191	5,527	1,250	95,561	135
13. Bracebridge	4,225	16,659	3,536	11,000	5,536	1,086	60,434	478
14. Brampton	7,925		9,495	5,000	7,434	917	45,542	1,067
15. Brockville	23,340	46,618	28,063	186,759	36,529	8,292	462,603	692

MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

Assets on December 31, 1903.					Liabilities on December 31, 1903.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Water works, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
1,255	.....	.....	3,109	5,310	1,490	.....	.....	94	1,584	101
1,234	1,286	.....	2,273	4,961	393	5,645	.....	.....	6,038	102
.....	.....	.....	4,186	4,518	.....	2,670	.....	.....	2,670	103
4,935	.....	.....	2,888	8,677	3,070	.....	551	1,384	5,005	104
146	.....	17,200	16,043	33,531	.....	24,836	5,060	214	30,110	105
1,200	10,000	25,000	8,200	50,790	.....	53,399	.....	.....	53,399	106
260	.....	175	3,329	4,268	150	1,105	1,011	93	2,359	107
4,169	.....	.....	3,250	7,419	2,180	2,980	1,857	.....	7,017	108
520	.....	25,000	3,200	29,335	.....	26,981	.....	114	27,095	109
736	.....	.....	1,695	3,677	845	.....	.....	4	849	110
.....	.....	.....	866	866	.....	.....	325	26	351	111
1,544	6,281	.....	1,950	10,333	600	5,100	3,150	.....	8,850	112
101	.....	.....	4,007	4,476	.....	.....	.....	.....	.....	113
.....	2,500	.....	200	4,469	.....	8,132	.....	.....	8,132	114
34	5,635	7,000	7,241	21,447	.....	14,492	.....	.....	14,492	115
85	.....	1,000	11,386	13,946	1,873	2,265	.....	865	5,003	116
9	.....	.....	82	313	.....	2,780	4,850	.....	7,630	117
2,474	3,352	16,969	7,469	30,288	246	22,801	1,665	1,567	26,279	118
920	.....	.....	2,000	3,002	.....	.....	1,150	.....	1,150	119
914	.....	6,300	2,000	9,430	700	8,376	458	280	9,814	120
2,380	5,000	.....	4,950	12,459	1,387	14,158	.....	50	15,595	121
1,086	811	.....	1,500	3,952	426	4,100	.....	12	4,538	122
143	.....	.....	1,227	1,606	113	.....	525	11	649	123
590	.....	.....	1,109	1,761	.....	.....	514	.....	514	124
.....	.....	.....	4,000	4,351	1,310	7,802	.....	262	9,374	125
79	400	.....	5,520	7,604	.....	21,983	.....	.....	21,983	126
117	.....	275	750	1,220	.....	1,000	450	.....	1,450	127
161	.....	7,000	6,367	14,690	576	14,070	.....	142	14,788	128
15	.....	.....	*9,380	9,718	.....	10,582	.....	86	10,668	129
.438	3,554	30	†2,948	6,984	.....	5,838	854	58	6,750	130
53	.....	30	2,392	5,146	293	3,500	.....	2,504	6,297	131
.....	.....	.....	5,851	6,194	.....	.....	.....	.....	.....	132
403	.....	.....	1,600	2,610	.....	3,221	.....	.....	3,221	133
1,514	.....	46,500	5,912	53,926	.....	40,046	10,049	350	50,445	1
3,418	12,334	19,341	10,804	47,117	3,119	49,893	.....	.....	53,012	2
350	1,961	30,500	61,800	98,398	.....	84,752	.....	249	85,001	3
6,112	.....	43,500	39,609	89,221	525	81,496	14,519	1,466	98,006	4
10,598	38,790	96,952	32,441	179,165	4,432	138,080	1,000	763	144,275	5
1,599	200	16,800	10,000	28,599	1,000	26,941	1,612	.....	29,553	6
1,000	.....	82,840	16,210	100,050	.....	81,920	13,250	1,226	96,396	7
4,502	29,252	153,584	55,752	246,814	10,281	249,411	7,558	1,380	268,630	8
1,565	.....	280,198	206,992	488,755	.....	479,960	24,612	1,650	506,222	9
1,914	.....	9,500	26,621	40,102	648	29,422	7,901	199	38,170	10
862	.....	6,200	13,098	21,865	.....	9,855	2,000	.....	11,855	11
1,875	12,944	.....	67,111	82,065	.....	109,246	3,101	.....	112,347	12
5,154	18,057	85,705	19,922	129,316	1,054	102,505	4,700	749	109,008	13
1,605	.....	120,000	13,515	136,187	2,975	139,179	7,600	2,097	151,851	14
24,020	‡203,843	381,263	227,316	837,134	.....	811,035	37,105	2,784	850,924	15

* Including $1,105 payable by Tp. of Winchester for share of school debentures.
† Including $2,477 payable by Tp. of Vaughan as share of school debentures.
‡ Including $20,000 for Industrial Mortgages not [illegible]

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Receipts, 1903.

Town Municipalities and Counties in which located.	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Fund and investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$	$	$	$
16. Bruce Mines, Algoma		3,265	139				600
17. Cache Bay, Nipissing		1,336	29				1,567
18. Carleton Place, Lanark	8,916	22,658	2,729	119			5,000
19. Clinton, Huron	11,399	15,955	1,328		56	765	
20. Cobourg, Northumberland	363	36,598	6,955				22,713
21. Collingwood, Simcoe	3,099	51,493	5,273	14,727	400	941	14,446
22. Copper Cliff, Nipissing	1,911	7,356	553				5,500
23. Cornwall, Stormont		53,028	3,807	9,274	24,607	951	17,364
24. Deseronto, Hastings	1,907	23,034	982	1,510		72	
25. Dresden, Kent	8,363	12,062	844	3,088			6,250
26. Dundas, Wentworth	28	35,303	967	2,102	1,545	841	5,000
27. Dunnville, Haldimand		22,087	1,036	1,495	808	184	3,380
28. Durham, Grey	3,395	9,897	775				6,850
29. East Toronto, York		24,996	172	2,732	326	653	5,500
30. Essex, Essex	437	11,751	810	1,301	100	126	900
31. Forest, Lambton	1,221	10,033	575			230	8,345
32. Fort Frances, Rainy River		4,724	84				1,400
33. Fort William, Thunder Bay	1,231	53,838	6,326	62,243	23,202	3,463	140,454
34. Galt, Waterloo		69,173	5,342	15,367	7,931	3,793	20,933
35. Gananoque, Leeds	899	24,144	2,002		4,404	589	25,300
36. Goderich, Huron	1,648	31,522	951	10,317	2,191	2,186	63,000
37. Gore Bay, Manitoulin	2,526	3,195	163				
38. Gravenhurst, Muskoka	614	13,277	615			38	15,500
39. Harriston, Wellington	1,335	12,613	1,276				18,885
40. Hawkesbury, Prescott	137	11,578	1,692		1,370		4,812
41. Hespeler, Waterloo	573	14,013	393	2,025			22,552
42. Huntsville, Muskoka	488	12,892	733	8,970			9,500
43. Ingersoll, Oxford		39,774	2,969		756	2,557	13,660
44. Kincardine, Bruce	5,811	15,690	1,057	4,471	7,038	779	
45. Kingsville, Essex	1,707	11,381	548	*1,958		65	10,100
46. Leamington, Essex	1,518	16,351	956	**6,233			45,171
47. Lindsay, Victoria	683	59,421	3,489	8,829	1,534	1,572	52,709
48. Listowel, Perth		22,718	1,153		5,191	439	15,786
49. Little Current, Manitoulin	1,637	2,781	547				
50. Mattawa, Nipissing	581	6,256	1,567				2,260
51. Meaford, Grey	4,720	17,620	1,002	1,957		542	55,386
52. Midland Simcoe		24,984	944	4,798	171		22,696
53. Milton, Halton	3,764	8,877	504	836	1,300	199	1,000
54. Mitchell, Perth	316	13,733	995	2,268		72	29,600
55. Mount Forest, Wellington	1,506	21,300	755	7,650	7,115	598	106,500
56. Napanee, Lennox and Addington	1,855	30,895	2,957	75		32	
57. New Liskeard		3,248	108				800
58. Newmarket, York	4,024	12,791	869	6,796	996	15	5,100
59. Niagara, Lincoln	550	13,658	1,238	4,075		26	5,500
60. Niagara Falls, Welland	17,666	51,560	3,287	†28,343		815	55,014
61. North Bay, Nipissing	1,518	20,109	2,364	5,139		125	4,900
62. North Toronto, York		18,065	412	2,393	12,003	604	3,114
63. Oakville, Halton	8,091	8,697	667		125	250	2,000
64. Orangeville, Dufferin		23,115	1,079	2,155	3,424	562	11,011
65. Orillia, Simcoe	377	33,848	2,617	23,075		599	

* Including $891, natural gas rates.
** Including $4,795, natural gas rates.
† Including $16,124 electric light and power rates.

MUNICIPALITIES.—*Continued.*

ASSETS AND LIABILITIES, 1903.—*Continued.*

Receipts.—*Continued.*			Disbursements, 1903.								
Borrowed on Debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply, and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	179	4,183	336	.....	232	.....	1,159	125	9	.....	16
.....	345	3,277	97	50	149	.....	527	.....	.....	.....	17
1,400	143	40,965	1,232	3,438	468	450	3,404	616	194	2,279	18
.....	711	30,214	997	1,772	1,129	256	2,867	83	24	596	19
5,889	1,005	73,523	2,672	5,214	777	1,611	6,032	1,613	482	.....	20
56,200	9,503	156,082	2,427	13,120	5,456	1,212	21,005	35,806	694	5,088	21
.....	44	15,364	879	221	248	229	672	.....	25	.....	22
20,055	278	129,364	1,570	8,299	2,961	3,031	3,230	4,644	1,163	.....	23
.....	1,018	28,523	869	3,784	389	593	2,593	405	344	1,850	24
41,551	870	73,028	546	3,807	649	456	3,946	216	230	599	25
.....	3,234	49,020	1,272	2,797	1,911	1,002	4,631	2,667	340	2,580	26
.....	104	29,094	1,296	4,184	913	492	4,265	605	706	800	27
7,000	358	28,275	781	375	576	67	7,779	.....	241	385	28
5,627	493	40,499	2,059	4,362	1,518	325	2,346	4,722	10	908	29
12,408	1,081	28,914	487	3,082	1,010	189	11,707	.....	53	387	30
2,287	177	22,868	351	739	385	345	3,745	181	17	580	31
.....	.....	6,208	707	101	150	7	1,661	225	16	.....	32
15,000	*28,883	334,640	2,740	22,796	7,150	3,414	24,377	113,675	1,501	.....	33
18,972	12,439	153,950	3,292	16,859	2,506	2,797	18,762	23,705	1,464	4,020	34
5,700	160	63,198	799	2,478	948	1,401	4,356	11,137	220	1,373	35
25,000	†10,458	147,273	2,197	14,435	2,216	830	3,881	1,494	199	.....	36
.....	.....	5,884	549	273	99	6	681	18	.....	.....	37
34,000	175	64,219	881	1,209	872	234	2,103	26,784	468	.....	38
.....	594	34,703	758	1,446	726	305	545	375	8	896	39
.....	381	19,970	551	.....	257	1,026	1,234	.....	.....	718	40
7,000	106	46,662	490	4,969	456	375	2,787	4,946	110	858	41
.....	49	32,632	919	x7,209	1,209	171	3,824	1,321	98	.....	42
25,372	.....	85,088	1,847	6,414	782	1,581	4,433	.....	224	.....	43
.....	2,409	37,255	692	6,799	1,231	362	2,475	575	12	619	44
10,000	707	36,466	969	2,769	488	451	1,447	6,378	16	558	45
4,250	315	74,794	573	4,344	577	107	2,372	9,046	520	695	46
.....	1,024	129,261	4,021	10,938	3,745	1,950	49,766	5,299	876	2,629	47
5,390	47	50,724	535	3,014	1,111	200	6,390	16,555	144	905	48
.....	18	4,983	249	59	178	275	368	71	95	.....	49
.....	11	10,675	725	710	269	585	405	77	121	.....	50
18,270	1,113	100,610	1,665	2,962	952	200	4,838	4,273	65	806	51
20,000	630	74,223	1,028	4,299	889	448	3,583	33,028	186	1,158	52
.....	236	16,716	562	904	505	207	1,610	.....	25	509	53
.....	387	47,371	576	4,732	598	675	1,007	.....	316	846	54
32,000	257	177,681	785	9,649	652	90	1,339	1,442	7	1,366	55
.....	315	36,129	1,561	4,370	754	645	3,189	611	539	4,800	56
.....	.....	4,156	360	.....	140	.....	856	.....	.....	.....	57
.....	227	30,818	824	6,288	441	150	2,741	1,504	38	877	58
.....	84	25,131	932	4,969	754	473	1,617	.....	83	758	59
7,400	2,057	166,142	4,769	27,979	2,510	1,710	31,298	10,680	1,004	4,649	60
22,557	905	57,617	969	6,305	4,455	1,453	6,086	5,655	955	.....	61
13,473	299	50,363	1,310	4,249	1,117	350	7,267	2,240	307	.....	62
10,000	468	30,298	551	1,270	1,192	675	1,065	.....	.....	182	63
4,463	437	46,246	790	3,085	1,012	750	1,217	...	289	840	64
75,900	‡4,240	140,656	2,436	7,661	3,358	576	27,032	22,311	446	2,472	65

* Including Town Hall and telephone plant insurance $1,000.

† Including $10,000, proceeds of debentures for loans to summer hotel [illegible] sold until 1903, loan having been made from bank pending sale.

x Including $3,093, cost of electric power development.

‡ Including $3,553 for installing electric plant. Including $[illegible] net amount of Judge's award [illegible] for closing streets.

STATISTICS OF ONTARIO
RECEIPTS, DISBURSEMENTS,

Disbursements, 1903.—*Continued.*

Towns	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.
	$	$	$	$	$	$	$	$
16. Bruce Mines	500			600	21	420	3,402	781
17. Cache Bay	529			1,200	23	700	3,275	2
18. Carleton Place	8,441		4,400	5,000	3,221	534	33,677	7,288
19. Clinton	4,600	2,544	711		2,978	805	19,372	10,842
20. Cobourg	14,336	200	5,757	22,563	11,024	773	73,054	469
21. Collingwood	13,894	11,973	14,137	5,175	20,374	2,530	152,891	3,191
22. Copper Cliff	2,966		544	5,500	284	806	12,374	2,990
23. Cornwall	13,348	1,377	35,586	22,172	12,761	19,222	129,364	
24. Deseronto	7,361		2,107	600	2,768	2,527	26,190	2,333
25. Dresden	2,475		1,560	8,850	3,753	41,029	68,116	4,912
26. Dundas	7,221	10,897	2,835	5,183	3,890	1,759	48,991	29
27. Dunnville	3,185	403	1,729	8,396	1,805	255	29,094	
28. Durham	2,370	7,000	1,660	1,677	1,789	759	25,459	2,816
29. East Toronto	4,043	1,628	1,865	10,646	4,211	1,850	40,493	6
30. Essex	4,092		2,115	1,973	2,891	600	28,586	328
31. Forest	3,200		2,601	7,745	974	822	21,694	1,174
32. Fort Frances	626			1,400		303	5,176	1,032
33. Fort William	9,264	32,249	1,076	79,376	19,550	§17,041	334,209	431
34. Galt	18,574	12,477	1,026	12,944	15,098	20,426	153,950	
35. Gananoque	7,000	2,329	10,349	14,100	4,384	1,139	62,013	1,185
36. Goderich	7,968	**31,205	4,069	64,000	10,577	837	143,908	3,365
37. Gore Bay	1,780	870			94	142	4,512	1,372
38. Gravenhurst	4,900		1,987	20,000	1,935	2,679	64,052	167
39. Harriston	2,584	1,413	1,142	19,235	1,806	493	31,702	3,001
40. Hawkesbury	5,847	1,248	204	6,900	593	556	19,134	836
41. Hespeler	**13,320		1,260	14,700	1,285	1,106	46,662	
42. Huntsville	3,500		1,524	9,000	3,009	441	32,225	407
43. Ingersoll	9,034	7,864	651	11,529	17,948	22,721	85,028	60
44. Kincardine	3,974	7,633	1,386		3,488	1,342	30,618	6,637
45. Kingsville	2,501		3,211	10,100	2,411	1,160	32,459	4,007
46. Leamington	9,597		4,937	34,718	4,837	1,007	73,240	1,554
47. Lindsay	16,454	2,077	7,362	3,404	15,560	4,515	128,596	665
48. Listowel	5,174	7,107	1,796	1,161	5,919	713	50,724	
49. Little Current	1,277		534		324	126	3,556	1,427
50. Mattawa	3,147		762	2,175	1,466	226	10,668	7
51. Meaford	5,268		3,862	47,630	6,356	¶19,678	98,525	2,085
52. Midland	5,818		4,258		8,643	†10,879	74,217	6
53. Milton	1,975	900	2,036	1,000	2,259	75	12,567	4,149
54. Mitchell	3,869	982	1,125	29,100	2,473	1,004	47,303	68
55. Mount Forest	4,904	38,639	3,023	106,500	7,345	490	176,171	1,510
56. Napanee	8,800		4,037		2,331	799	32,436	3,693
57. New Liskeard	1,678			800	18	133	3,985	171
58. Newmarket	3,730	1,328	2,686	4,700	3,169	261	28,737	2,081
59. Niagara	2,284		2,839	7,550	2,479	307	25,045	86
60. Niagara Falls	20,590		11,815	17,300	16,024	‡6,166	153,444	12,698
61. North Bay	8,400		1,960	15,500	3,773	663	56,174	1,443
62. North Toronto	4,728	6,350	9,430	8,433	4,430	152	50,363	
63. Oakville	400	250	74	7,125	1,707	801	15,592	14,706
64. Orangeville	8,100	4,689	2,832	13,849	5,966	2,827	46,246	
65. Orillia	18,692	266	11,047	15,067	11,271	2,397	124,702	15,954

* Including $9,500, advance from bank pending sale of debentures.
** Including $25,000, loan to organ company.
† Including $10,004 to Government for docks.
Including $1,550, bonus to linen mill for site.
§ Including $10,000 Copp bonus.
‡ Including $2,660 on electric light plant mortgage.
¶ Including $19,009 bonuses to manufacturing companies.

MUNICIPALITIES.—*Continued.*
ASSETS AND LIABILITIES, 1903.—*Continued.*

Assets on December 31, 1903.					Liabilities on December 31, 1903.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Water works, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
354	.....	.....	325	1,460	1,043	.....	.....	3,012	4,055	16
370	.....	.....	408	780	.....	.....	367	903	1,270	17
125	.....	.....	59,610	67,023	5,000	71,700	.....	644	77,344	18
493	41,438	.....	24,500	77,273	2,522	73,688	.....	422	76,632	19
8,710	800	.....	153,445	163,424	1,962	246,039	12,150	992	261,143	20
252	17,033	140,721	140,850	302,047	.....	378,233	14,446	2,374	395,053	21
988	.....	.....	5,515	9,493	3,004	3,154	1,000	3,383	10,541	22
45,827	3,521	135,632	44,900	229,880	15,375	269,547	17,364	859	303,145	23
19	.....	44,000	9,457	55,809	3,239	59,809	.....	13	63,061	24
5,022	.....	12,000	37,683	59,617	5,225	70,151	2,400	33	77,809	25
13,228	34,085	47,974	79,222	174,538	.....	77,493	.....	676	78,169	26
1,540	9,350	15,000	14,366	40,256	3,450	33,719	3,380	3,069	43,618	27
1,382	17,000	.....	8,128	29,326	.....	42,081	5,400	1,200	48,681	28
3,629	18,663	50,878	31,206	104,382	3,240	79,412	3,456	470	86,578	29
4,153	1,400	32,931	16,051	54,863	2,264	49,545	4,900	1,400	58,109	30
805	7,000	.....	15,380	24,359	.....	22,477	1,300	.....	23,777	31
1,452	.....	350	940	3,774	1,828	.....	.....	2,840	4,668	32
23,025	82,805	*119,500	180,707	406,468	1,123	309,203	151,640	13,788	475,754	33
5,665	79,318	167,319	112,189	364,491	.....	346,331	20,933	1,441	368,705	34
187	22,213	40,000	27,000	90,585	.....	71,551	13,200	84	84,835	35
5,477	85,805	103,146	47,805	245,598	1,167	279,633	14,000	4,146	298,946	36
411	*2,468	.....	3,000	7,251	1,550	1,850	.....	40	3,440	37
1,746	134	22,000	22,300	46,347	2,987	60,975	.....	.....	63,962	38
3,159	**13,411	.....	12,700	32,271	2,207	37,256	†14,827	225	54,515	39
3,009	***1,248	.....	700	5,793	688	6,718	413	.....	7,819	40
1,209	.....	14,550	19,837	35,596	175	28,326	9,852	1,285	39,638	41
2,538	.....	56,486	3,291	62,722	1,875	48,905	‡4,500	113	55,393	42
9,009	72,982	.....	88,351	170,402	2,393	206,356	13,660	2,628	225,037	43
4,234	20,195	57,385	36,520	124,971	3,995	71,772	1,400	186	77,353	44
1,282	.....	44,000	12,823	62,112	98	52,437	.....	358	52,893	45
20,197	.....	40,000	23,557	85,308	6,910	88,217	21,200	45	116,372	46
12,727	39,283	87,000	130,362	270,037	2,617	300,657	87,708	2,210	393,192	47
983	33,213	24,471	12,490	71,157	.....	125,284	15,786	724	141,794	48
512	.....	.....	2,248	4,187	575	3,014	.....	127	3,716	49
8,919	.....	.....	11,032	19,958	4,177	26,164	2,261	557	33,159	50
2,881	.....	22,000	35,468	62,434	.....	118,274	18,555	993	137,822	51
4,088	.....	108,576	14,975	127,645	1,487	161,283	33,972	2,000	198,742	52
1,886	11,790	24,900	8,431	51,156	.....	45,378	.....	771	46,149	53
311	3,065	24,000	14,449	41,893	870	49,179	1,500	80	51,629	54
207	48,567	44,500	34,460	129,244	.....	151,436	6,000	.....	157,436	55
12,532	.....	.....	26,937	43,162	7,400	47,112	.....	513	55,025	56
752	.....	.....	.....	923	.....	.....	.....	460	460	57
337	1,368	52,350	21,231	77,367	2,095	54,935	2,900	.....	59,930	58
2,224	.....	51,500	25,516	79,326	802	43,727	1,787	200	46,516	59
15,011	.....	193,050	248,548	469,307	.....	308,235	68,121	20,500	396,856	60
16,497	.....	61,801	3,681	83,422	4,297	72,385	4,923	1,624	83,229	61
11,364	16,927	57,310	30,548	116,149	.....	95,759	3,114	.....	98,873	62
1,776	10,603	.....	††30,100	57,185	5,086	37,426	.....	2,025	44,537	63
2,044	15,308	50,312	23,613	91,277	3,812	120,203	11	839	124,865	64
9,704	1,417	223,319	53,517	303,911	5,292	272,077	.....	1,046	278,415	65

* Including $600 loan to Agricultural Society, and $100 loan to Library.
** Including $3,411, debentures issued but held unsold by town. *** Deposit to the credit of school Fund.
† Including $10,077, loan from Standard Bank for local improvements, for which town holds issues debentures. ‡ Omitting $1,236 not traceable in 1901 and 1902
†† Including $10,000 for harbor, and $9,000 for Swing Bridge.
Being $19,000, electric light plant mortgage and $1,500 per Forest City Power Company deposit.

STATISTICS OF ONTARIO

RECEIPTS, DISBURSEMENTS,

Receipts, 1903.

Town Municipalities and Counties in which located.	Balance from 1902.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refund from Sinking Funds and investments.	Interest and dividends.	Borrowed for current expenses.
	$	$	$	$	$	$	$
66. Oshawa, Ontario		28,387	1,362		1,816	48	13,580
67. Owen Sound, Grey	16,866	115,107	4,614	29,480	40,240	5,839	92,802
68. Palmerston, Wellington		14,559	657		2,158	1,018	12,500
69. Paris, Brant	1,265	22,171	1,291	8,763		345	19,725
70. Parkhill, Middlesex	760	7,881	565		846	477	11,761
71. Parry Sound, Parry Sound	132	17,075	1,315	8,775	3,233	2,877	5,925
72. Pembroke, Renfrew	533	36,559	2,740	7,487		62	25,435
73. Penetanguishene, Simcoe	838	17,501	515	2,892		236	6,000
74. Perth, Lanark	3,187	25,297	2,027			11	16,026
75. Peterborough, Peterborough		93,216	8,720	25,390	1,458	1,075	5,846
76. Petrolea, Lambton		43,952	2,519	15,739			10,883
77. Picton, Prince Edward	260	26,223	2,367	9,821	1,242	8	1,059
78. Port Arthur, Thunder Bay	8,533	40,972	6,470	†48,852	5,000	646	88,909
79. Port Hope, Durham	261	32,062	2,971	3,742	87	940	40,421
80. Prescott, Grenville	8,298	25,175	3,147	12,052		97	17,823
81. Preston, Waterloo	2,188	14,298	707		1,000	145	4,000
82. Rat Portage, Rainy River	732	43,773	2,962	‡39,093		43	398,000
83. Renfrew, Renfrew		29,756	1,591	7,186	1,005		11,327
84. Ridgetown, Kent		17,766	1,516				23,534
85. St. Marys, Perth	69	30,981	1,184	6,150	873	1,040	101,291
86. Sandwich, Essex	1,754	11,589	742	1,978			7,031
87. Sarnia, Lambton	132	66,087	3,975	19,141	1,239	5,944	210,829
88. Sault Ste. Marie, Algoma		69,542	5,478			6,100	60,889
89. Seaforth, Huron	4,796	15,761	1,182	728	618	189	8,892
90. Simcoe, Norfolk		23,562	958				4,039
91. Smith's Falls, Lanark	8,197	36,552	2,869	5,411			2,261
92. Stayner, Simcoe		5,544	393	853			3,325
93. Strathroy, Middlesex		22,022	938		2,815	989	16,027
94. Sturgeon Falls, Nipissing	9	9,188	1,093	886			6,331
95. Sudbury, Nipissing	285	15,900	678	11,904			7,898
96. Thessalon, Algoma	1,639	5,220	309	3,247			600
97. Thornbury, Grey	748	4,730	160			37	2,000
98. Thorold, Welland	977	16,815	661	3,305		13	10,500
99. Tilsonburg, Oxford	2,697	19,354	1,118		5,638	1,473	35,385
100. Toronto Junction, York	9,440	64,529	2,534	12,554	13,831	842	
101. Trenton, Hastings	1,586	31,444	2,174	3,391		501	89,063
102. Uxbridge, Ontario	477	12,780	866			300	24,200
103. Vankleek Hill, Prescott	809	6,242	642				1,724
104. Walkerton, Bruce	1,818	20,529	1,726	2,195	2,000	52	12,000
105. Walkerville, Essex	389	32,234	696				18,767
106. Wallaceburg, Kent		18,969	1,402			98	9,546
107. Waterloo, Waterloo		28,983	1,282	6,430	599	118	27,470
108. Welland, Welland	236	21,907	822	3,507		643	
109. Whitby, Ontario	767	17,605	1,070		500		57,757
110. Wiarton, Bruce	140	16,660	1,094	3,287		17	54,540
111. Wingham, Huron	1,594	14,379	2,208		4,160	431	36,800

* Being for Electric Railway revenue, $29,387; gas rates, $15,320; telephone rates, $4,145.
† Including electric power and telephone rates.
‡ Including $30,000 for electric light plant bought from company, to be paid when debentures are sold.

MUNICIPALITIES.

ASSETS AND LIABILITIES, 1903.

Receipts.—*Continued.*			Disbursements, 1903									
Borrowed on Debentures	Miscellaneous.	Total receipts.	Allowances, salaries and commission.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	Streets and parks.	Construction of buildings, water works, etc.	Charity.	County levy.	No.
$	$	$	$	$	$	$	$	$	$	$	
3 000	1,125	49,318	1,075	3,804	1,525	1,033	12,264	180	820	1,605	66
71,000	3,121	379,069	6.207	8,431	3,771	6,264	16,463	98,827	1.117	6,430	67
805	227	31,924	529	944	832	322	2.021	2,679	1	825	68
45,285	549	99,394	2,131	8,995	1,110	621	1.563	26,156	450	1.113	69
7,300	378	29,968	370	1,300	546	216	4,915	.....	31	495	70
33,000	178	72,510	891	4,168	1,729	525	7.422	6,294	231	.....	71
14,500	526	87,842	2,037	2,608	1.218	1,043	26,297	5,249	16	2.242	72
.....	160	28.142	812	3,129	353	480	1,553	1,188	125	935	73
.....	360	46.908	894	3,921	996	814	11,298	7,257	137	3,069	74
17,787	748	154.240	2,488	26,080	3,981	6,802	24,085	15,564	2,488	.....	75
15,475	375	88,943	3,039	12.689	2.229	986	20.241	409	273	2,630	76
.....	272	41,252	1,201	10,592	534	1,079	5,469	2,023	398	1.089	77
.....	3,980	203,362	2,392	3.722	3,516	2,504	3,618	75,667	633	.....	78
2,500	*8,412	91,396	3,407	6,082	995	667	5,327	5,996	428	1,962	79
6,173	250	73,015	1,565	12,493	1,696	840	8,809	2,756	388	.....	80
3,000	33	25,371	685	3,222	551	354	2.773	.....	.....	928	81
87.118	909	572,630	1,258	†17,284	1,919	1,613	2,989	**76,605	536	.....	82
8,148	‡22,807	81,820	762	7,879	1.437	576	13,428	2,807	399	1,113	83
.....	207	43,023	645	1,998	1.219	570	1,610	.....	134	927	84
28,500	1,126	171,214	900	8,428	954	1,216	16,567	10,591	509	.....	85
.....	64	26,158	854	3,376	395	182	3,993	3,939	158	387	86
87,870	886	396,103	3,037	19,178	2,725	3,569	25,330	28,552	1,025	3,340	87
27.448	‖5,704	175.161	9.044	2.755	1,249	2,728	13,166	27,222	127	.....	88
11,500	2,455	46,121	1,205	2,958	1,089	410	1,934	3.844	63	684	89
.....	211	28,770	878	3,995	927	999	3,728	165	352	1,463	90
43,162	3,032	101,484	1,323	7,114	1,800	564	13,922	29,196	136	.....	91
.....	82	10,197	432	734	171	12	382	.....	29	359	92
65,476	362	108,629	989	3,025	967	552	7,918	47.189	103	1,414	93
20,000	310	37,817	484	2,037	343	100	1,917	21,340	85	.....	94
.....	173	36,838	938	15,082	825	77	2,877	2,606	222	.....	95
.....	102	11,117	1.406	2,067	201	367	684	267	104	.....	96
.....	11	7,686	311	392	327	78	1,199	.....	85	280	97
5,000	232	37,503	590	3,778	694	625	1,946	805	3	983	98
1,280	507	67,452	828	2,312	773	576	5,118	100	53	.....	99
.....	13,781	117,511	1,986	21,251	4,322	4,705	7,161	7,438	482	.....	100
.....	1,205	129,364	1,357	1,467	1,517	1,412	6,909	1,444	759	.....	101
.....	191	38,814	725	1,235	350	363	1,164	463	325	1,535	102
1,315	67	10,799	254	471	391	37	3,238	118	9	425	103
14,806	711	55,837	821	1,593	2,098	731	2,667	2,346	496	894	104
27,052	54	79,192	1,473	4,220	1,100	2,731	21,472	7,890	190	500	105
.....	751	30,766	899	3,420	462	916	2,641	.....	83	759	106
22,521	508	87,911	2,113	7,700	1,406	400	11,420	2,641	489	1,822	107
3,000	195	30,310	1,307	3,160	698	490	1,787	3,724	27	1,173	108
.....	1,871	79,570	1,347	1,851	1,626	425	6,104	963	123	1,149	109
.....	12	75,750	598	3,716	1,092	386	11,312	1,852	52	811	110
.....	311	59,883	1,128	1,480	828	410	4,197	¶30,000	35	390	111

* Including harbor dues, etc.
† Including electric power and telephone maintenance.
** Including electric power and telephone construction.
‡ Including $22,500 from Dominion Government bonus returned.
‖ Including $5,000 balance Carnegie library grant.
¶ Cost of electric light plant bought from company.

STATISTICS OF ONTARIO
RECEIPTS, DISBURSEMENTS,

Disbursements, 1903.—*Continued.*

Towns.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.
	$	$	$	$	$	$	$	$
66. Oshawa	10,905	.....	3,870	4,086	3,819	4,332	49,318	.....
67. Owen Sound	21,194	57,934	4,431	70,725	32,037	3,000	336,831	42,238
68. Palmerston	3,318	1,254	4,274	9,184	3,956	1,166	31,305	619
69. Paris	7,409	350	4,628	23,925	4,329	711	83,491	15,903
70. Parkhill	3,297	1,397	.....	12,836	1,102	790	27,295	2,673
71. Parry Sound	5,750	10,603	3,589	5,903	6,561	*18,789	72,455	55
72. Pembroke	11,867	672	8,334	18,000	7,152	1,107	87,842	.....
73. Penetanguishene	4,062	913	8,751	.....	3,955	880	27,136	1,006
74. Perth	8,449	11	2,830	.....	1,681	570	41,927	4,981
75. Peterborough	30,000	5,627	250	.....	29,372	7,503	154 240	.....
76. Petrolea	10,100	.....	18,323	1,526	14,779	1,719	88,943	.....
77. Picton	8,440	1,402	2,731	1,064	2,121	2,933	41,076	176
78. Port Arthur	4,155	6,370	5,000	18,000	22,011	**52,384	199,972	3,390
79. Port Hope	8,966	2,059	2,113	40,058	11,251	1,780	91,091	305
80. Prescott	6,888	1,249	3,105	23,773	6,776	†1,660	71,998	1,017
81. Preston	4,592	.....	3,367	4,000	2,043	1,479	23,994	1,377
82. Rat Portage	15,100	1,537	8,273	423,767	17,111	3,198	571,190	1,440
83. Renfrew	8,757	22,500	3,925	9,794	7,124	1,296	81,797	23
84. Ridgetown	5,325	.....	2,504	21,659	3,666	2,766	43,023	.....
85. St. Marys	9,825	‡28,500	6,863	78,500	5,767	2,594	171,214	.....
86. Sandwich	2,780	.....	1,120	6,040	1,364	376	24,964	1,194
87. Sarnia	25,406	1,970	21,477	231,844	23,369	5,162	395,984	119
88. Sault Ste. Marie	18,226	5,401	194	57,529	26,711	10,809	175,161	.....
89. Seaforth	6,813	‖13,198	.....	8,892	3,027	885	45,002	1,119
90. Simcoe	6,374	.....	2,273	1,730	3,995	1,891	28,770	.....
91. Smith's Falls	10,800	2,428	8,139	5,613	15,378	5,071	101,484	.....
92. Stayner	1,547	.....	.....	4,716	167	152	8,701	1,496
93. Strathroy	5,806	16,706	3,664	13,094	4,180	3,022	108,629	.....
94. Sturgeon Falls	3,355	.....	1,281	3,000	2,755	1,120	37,817	.....
95. Sudbury	2,977	.....	2,235	5,000	3,408	225	36,472	366
96. Thessalon	1,787	106	470	300	1,569	257	9,585	1,532
97. Thornbury	994	112	307	2,000	257	76	6,418	1,268
98. Thorold	5,677	.....	2,964	8,000	3,278	§6,421	35,764	1,739
99. Tilsonburg	5,410	6,965	3,002	33,000	5,772	687	64,596	2,856
100. Toronto Junction	23,446	26,347	.....	.....	10 637	6,819	114,594	2,917
101. Trenton	7,909	93	592	92,233	8,434	1,907	129,033	331
102. Uxbridge	3,600	1,597	762	23,200	2,788	686	38,793	21
103. Vankleek Hill	2,999	.....	269	650	718	1,014	10,593	206
104. Walkerton	5,810	12,619	2,669	12,000	4,902	***4,192	53,838	1,999
105. Walkerville	5,439	.....	7,012	23,200	3,144	821	79,192	.....
106. Wallaceburg	5,480	.....	4,242	6,071	4,929	864	30,766	.....
107. Waterloo	8,097	††17,154	4,836	21,360	5,645	2,828	87,911	.....
108. Welland	4,200	2,793	2,080	3,690	4,785	350	30,264	46
109. Whitby	6,750	500	1,009	53,774	3,100	230	78,951	619
110. Wiarton	4,950	¶25,571	1,982	17,696	5,388	344	75,750	.....
111. Wingham	3,722	4,403	1,755	7,431	3,225	600	59,604	279

* Including $5,500 paid to James Bay Railway.
** Including $38,698 for electrical railway construction, and $10,466 for telephone construction.
† Including $600 to County.
‡ Unsold debentures hypothecated to bank for advances.
‖ Including $10,000 loan to Dick Co.
§ Including $5,000 bonus to Montrose Paper Mills.
*** Including $2,000 bonus to bobbin factory
†† Including $17,000 loan to manufacturers.
¶ Including $25,000 loan on mortgage to Beet Sugar Company

MUNICIPALITIES. *Continued*

ASSETS AND LIABILITIES, 1903 —*Continued*.

Assets on December 31, 1903.					Liabilities on December 31, 1903.					
Taxes in arrears.	Sinking Fund and other investments and deposits.	Water works, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
2,438	44,759	.....	27,893	75,090	.....	80,258	13,580	100	93,938	66
49,900	149,076	213,516	123,686	578,416	19,025	660,968	61,411	715	742,119	67
1,500	25,572	2,500	7,853	38,044	.....	88,700	3,500	.....	92,200	68
40	7,600	103,076	55,450	182,069	.....	109,626	.....	.....	109,626	69
774	7,450	.....	12,482	23,379	1,702	21,500	611	412	24,225	70
4,869	10,637	75,089	22,134	112,784	.....	92,925	5,925	5,000	103,850	71
36,704	4,237	69,000	43,217	153,158	15,517	*135,005	28,785	2,320	181,627	72
2,739	6,603	38,000	15,765	64,113	1,578	74,887	6,036	5,096	87,597	73
988	391	.....	26,351	32,711	5,152	27,787	16,026	292	49,257	74
9,955	¶96,201	235,000	349,213	690,369	.....	598,760	§24,459	8,402	631,621	75
9,745	.....	188,000	67,894	265,639	11,200	215,266	10,883	2,821	240,170	76
865	1,402	48,000	14,500	64,943	.....	40,249	1,059	1,371	42,679	77
13,851	58,425	*216,374	†148,598	440,638	5,661	385,275	159,944	7,632	558,512	78
12,175	22,972	82,154	‡195,188	312,794	.....	245,269	7,397	3,438	256,104	79
12,940	1,249	126,895	56,481	198,582	1,120	155,760	6,250	.....	163,130	80
3	1,000	600	21,335	24,315	736	37,848	.....	79	38,663	81
13,037	6,045	223,466	80,876	324,864	5,900	268,628	76,087	1,908	352,523	82
3,005	22,500	95,000	45,370	165,898	2,270	145,695	11,327	.....	159,292	83
1,331	.....	.....	24,800	26,131	927	64,193	8,034	.....	73,154	84
1,851	‖27,627	68,000	35,728	133,206	40	102,140	28,791	165	131,136	85
9,481	.....	19,000	13,260	42,935	2,502	28,130	8,031	439	39,102	86
37,118	33,602	129,000	267,619	467,458	.....	333,947	89,795	15,533	439,275	87
59,834	290,439	.....	42,623	392,896	14,783	542,250	60,889	22,506	640,428	88
956	§47,695	13,000	21,540	84,310	.....	82,089	.....	89	82,178	89
2,934	.....	.....	26,270	29,204	.....	72,015	4,039	935	76,989	90
2,233	2,428	256,576	72,328	333,565	.....	267,730	79,261	4,755	351,746	91
1,921	.....	25,000	2,696	31,113	1,853	22,182	.....	894	24,929	92
700	¶19,706	47,189	18,000	85,595	.....	97,146	8,227	350	105,723	93
8,988	.....	29,205	10,000	48,193	1,990	52,426	4,023	370	58,809	94
3,796	.....	62,532	6,578	73,272	2,349	51,516	6,633	675	61,173	95
3,131	538	27,575	5,540	38,316	.....	29,291	1,644	300	31,235	96
34	**1,415	75	1,810	4,602	1,237	4,156	.....	26	5,419	97
4,250	.....	25,000	18,972	49,961	4,392	46,597	5,500	1,234	57,723	98
1,186	32,369	33,500	29,638	99,549	5,379	110,381	9,385	.....	125,145	99
19,848	††26,347	174,500	522,870	746,482	17,465	1,063,650	.....	3,114	1,084,229	100
16,942	8,948	15,000	118,359	159,580	.....	145,003	10,890	¶13,016	168,909	101
2,968	11,036	10,000	25,287	52,312	.....	16,158	4,797	367	51,322	102
4,532	.....	.....	4,850	9,588	2,184	11,492	4,172	*d*4,034	21,882	103
300	*b*23,299	45,000	34,268	104,866	587	119,955	2,614	2,373	125,529	104
256	.....	.....	62,647	62,903	500	63,700	18,767	257	83,224	105
10,096	900	.....	27,391	38,387	735	87,229	26,041	.....	114,005	106
460	*c*19,031	55,000	78,936	153,427	7,000	114,837	11,035	1,025	163,897	107
8,073	21,812	57,799	51,456	139,216	2,000	103,853	2,057	.....	107,910	108
10,818	.....	4,000	29,015	44,452	.....	57,463	15,480	520	73,463	109
401	48,328	33,000	28,905	110,637	773	111,309	*d*38,950	.....	151,032	110
533	31,105	50,300	21,836	104,053	473	95,135	*e*30,000	2,188	127,796	111

¶ Omitting $18,900 previously returned as in Town Account, but omitted by special Auditors' recommendation.

* Omitting $1,348 due to omission of previous payment of debenture not reported.

§ Omitting $18,900 previously reported as due Sinking Fund but now written off by Special Auditors.

‡ Mortgage on electric light plant. † Including $59,492 for "Current River" works loan. ‡ Including Barlee.

‖ Balance of unsold debentures hypothecated to bank. § Including $24,682 net value of Industrial mortgages.

¶ Omitting $1,000 from Industrial Loan mortgages. ** Omitting $75 overstated prior to 1902.

†† Including $15 955 deposit for debenture interest, and $900 balance to credit of Loc. Imp. account.

¶ Due County of Hastings for various debts. *a* P. W. of debentures payable to Hawkesbury Up.

b Including $2,106 unsold consolidated debentures held by bank as collateral, and Knechtel & Potts' mortgages, $16,000. *c* Including $17,000, loan to manufacturers.

d On notes for local improvements and beet sugar loan pending sale of debentures.

e Payable to Electric Light Company, on sale of debentures issued for purchase of plant.

STATISTICS OF ONTARIO—

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

Receipts, 1903.

County Municipalities.	Balance from 1902	Rates from local municipalities.	Licenses.	Fees, rents, tolls, fines, etc.	Surplus fees from Registrar.	Interest and dividends.	From Legislature for schools.
	$	$	$	$	$	$	$
1. Brant	11,752	12,770	105	279	59	182	1,839
2. Bruce	7,050	35,246	1,205	171	1,885	61	4,989
3. Carleton	4,445	25,679	280	423	236	998	3,610
4. Dufferin	321	13,064	422	129		291	2,149
5. Elgin	4,828	36,229	146		133	181	3,867
6. Essex	10	24,368	210		1,659		3,450
7. Frontenac	4,347	29,645	145	2,724		106	3,346
8. Grey		42,109	892	128	785	990	6,007
9. Haldimand	4,352	15,557	150	52		15	2,137
10. Haliburton	1,186	2,070	14	137		14	3,312
11. Halton	3,623	16,582	185	14		26	1,527
12. Hastings	2	40,247	537	312	408	283	4,430
13. Huron	1,380	35,784	1,086	74	2,862	1,419	5,546
14. Kent	654	36,094	430	223	1,763	96	5,216
15. Lambton	2,838	32,761	184	87	1,736	299	4,232
16. Lanark	6,095	26,693	378	24			3,048
17. Leeds and Grenville	149	25,386	488	48	36	711	4,799
18. Lennox and Addington	11,290	29,396	426	143		146	2,909
19. Lincoln	1,849	27,043	190	60	14	68	1,719
20. Middlesex	728	72,319	327	19	159	1,909	5,796
21. Norfolk	9,389	19,026	134	155		89	2,637
22. Northumberland & Dur.	8,206	40,972	685	7	7	402	5,125
23. Ontario	22,786	30,870	368	62	162		4,192
24. Oxford	49,694	30,695	560	30	621	1,106	3,937
25. Peel	2,419	18,000	180	52			1,953
26. Perth	19,599	31,636	726	58	134	1,581	3,657
27. Peterborough		25,286	321	160	130	400	2,959
28. Prescott and Russell		15,606	248	132		275	2,242
29. Prince Edward	282	11,800	95	53		2	1,712
30. Renfrew	3,683	16,289	610	56	146	470	5,243
31. Simcoe	1,395	50,144	505	222	2,778	610	7,223
32. Stormont, Dun. & Glen		31,045	1,322	47	3		6,054
33. Victoria	614	22,246	876	494	33		3,264
34. Waterloo	97	33,264	160	89	333		2,578
35. Welland		30,954	166	95	579	17	2,152
36. Wellington	4,355	47,226	293	140	134	175	3,991
37. Wentworth	27,782	38,000	156	408	963	1,564	3,065
38. York	27,071	43,141	408	289	171	516	5,217
Totals:							
1903	244,271	1,115,242	15,613	7,596	17,929	15,002	141,129
1902	190,104	1,114,766	15,102	9,020	14,520	12,505	137,792
1901	192,995	1,060,743	15,456	10,132	12,614	10,808	144,370
1900	220,596	1,099,357	15,206	12,305	16,131	13,241	142,954
1899	179,638	1,110,356	14,971	11,666	11,716	12,469	149,361
1898	227,866	1,047,924	14,227	11,573	10,957	17,475	147,418
1897	222,663	1,097,689	12,378	12,454	13,292	16,101	149,606
1896	221,381	1,111,043	12,357	24,939	16,951	34,058	142,717
1895	224,203	1,243,999	12,573	25,557	13,626	30,501	144,095
1894	262,914	1,258,060	13,097	24,966	13,351	33,063	142,180

COUNTY MUNICIPALITIES.

of the County Municipalities for the year ending December 31st, 1903.

Receipts, 1903.—*Continued.*								Disbursements, 1903.		
From Legislature for administration of justice.	Refund of moneys loaned or invested.	Money borrowed for current expenses.	Money borrowed on debentures.	Non-resident taxes collected.	Towns or cities separated from county for various services.	Miscellaneous.	Total receipts.	Attendance at meetings of council and committees.	Allowances, salaries and commissions.	No.
$	$	$	$	$	$	$	$	$	$	
2,590				93	3,408	115	33,192	651	1,410	1
2,193	8,000	15,000		1,643		1,225	78,668	1,207	2,639	2
3,958		33,771		1,345	8,250	714	83,709	1,667	2,040	3
698	2,000	7,849		188		5	27,116	336	1,195	4
3,872		30,000		334	6,857	2,583	89,030	938	2,480	5
3,033		23,601		3,313		2,446	62,060	840	2,637	6
1,308		32,021		1,335	5,040	67	80,084	2,026	1,946	7
2,397	1,359			1,332		293	56,292	1,185	2,089	8
2,051				142		918	25,374	846	1,020	9
150		1,000		791		101	8,775	186	660	10
994		9,000		570		53	32,574	210	1,323	11
1,560		43,863		734	5,227	1,109	98,712	1,491	2,110	12
1,453	3,325	26,000		151		695	79,775	1,026	3,000	13
4,604		29,253		1,462	2,823	19,298	91,916	1,829	3,355	14
2,358		13,000		2,639		296	60,460	1,185	2,152	15
1,814		36,747		1,120		1,349	80,298	964	1,859	16
2,769		14,590		211	3,775	*738	53,700	1,111	2,350	17
1,922				61			46,293	976	960	18
2,126		2,500		555	3,581	1,819	41,524	779	1,755	19
10,651	24	4,642	74,500	481	9,291	6,792	187,638	1,061	3,900	20
1,225				687		439	33,781	728	1,304	21
4,395		14,000		558		272	74,629	3,499	2,080	22
3,723		93,000		413		35,061	160,637	1,065	1,815	23
1,493				266	2,128	1,056	91,586	1,503	3,201	24
1,288		20,000	6,000	1,112		1,000	52,094	465	1,347	25
1,434		16,500		98	2,098	1,593	79,114	585	1,674	26
	499	12,003	710,000	640	2,225	1,548	56,261	1,334	1,577	27
1,180		4,519		4,143		186	28,531	1,346	964	28
1,206		1,173		46			16,369	331	730	29
1,880		10,000	16,500	224		3,168	58,269	1,400	1,712	30
3,924		40,000	100,000	1,854		4,439	213,094	3,104	3,020	31
2,015		92,000	145	1,061		5,677	139,369	1,909	1,682	32
1,312		21,000		721	550	1,917	53,027	1,533	1,824	33
2,679		27,758				1,346	68,304	1,440	1,572	34
2,444		10,500		991	1,945	‖9,949	59,762	765	1,320	35
2,640		21,000		236	2,974	141	83,305	960	2,616	36
4,914			98,000	287	6,962	‡23,659	205,760	2,302	3,094	37
				658	1,625	25,018	104,114	2,721	2,816	38
90,283	15,207	706,380	305,145	32,525	68,729	120,145	2,895,196	47,504	75,228	
127,786	56,723	536,480	149,067	34,604	93,019	51,805	2,543,293	42,768	73,516	
122,330	77,760	487,297	62,039	36,861	90,186	51,538	2,375,129	41,407	75,382	
138,685	68,399	472,430	77,491	42,540	89,910	63,286	2,472,531	39,616	78,454	
133,845	55,406	437,272	92,638	55,524	81,535	68,361	2,414,758	44,548	77,054	
146,726	95,195	557,227	119,863	73,120	79,175	59,919	2,608,665	38,934	71,617	
171,541	35,530	672,967	117,516	81,235	97,267	105,650	2,805,889	43,443	74,508	
148,916	422,348	742,454	200,419	71,176	107,562	97,333	3,353,654	72,772	75,669	
161,820	226,492	581,717	65,300	99,044	95,797	28,426	2,953,150	62,740	77,113	
141,868	381,353	752,801	301,600	89,459	102,615	52,933	3,570,260	67,512	77,472	

* Including $2,018 fees paid by High School pupils in county. *a* Including $1,000 for House of Refuge.
‡ Including $19,467 from Government for "Good Roads." ‖ Including $8,000 from late Treasurer's bondsmen.
b Issued in 1902. *g* Including $9,000 from Dominion Government for Montrose bridge.
† Including $21,250 proceeds of sale of buildings and land, of which $8,000 is on mortgage.

STATISTICS OF ONTARIO—

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

Disbursements, 1903.—*Continued.*

County Municipalities.	Printing, advertising, postage and stationery.	Insurance, heating, lighting and care of buildings.	Law costs, including salaries.	Other expenses of municipal government.	Roads and bridges.	Grants to Municipalities for roads and bridges.	Buildings and other works.
	$	$	$	$	$	$	$
1. Brant	336	1,499	200	140	85	.....	230
2. Bruce	988	1,849	462	204	3,776	4,929	.....
3. Carleton	754	1,666	555	915	6,528	.....	2,516
4. Dufferin	385	19	92	473	1,569	.....	.....
5. Elgin	302	1,777	136	539	7,633	500	.....
6. Essex	811	1,584	144	600	1,947	.....	.....
7. Frontenac	834	.....	310	712	4,538	.....	.....
8. Grey	679	3 030	.....	770	1,111	.....	*13,357
9. Haldimand	410	1,059	.....	236	455	.....	889
10. Haliburton	120	49	.....	54	424	.....	.....
11. Halton	236	438	.....	187	5,158	.....	.....
12. Hastings	517	1,284	18	263	20,855	6,418	.....
13. Huron	947	1,645	136	464	18,582	250	5,566
14. Kent	954	2,102	300	342	1,105	598	2,110
15. Lambton	943	1,390	239	921	3,310	.....	1,552
16. Lanark	1,012	1,161	432	484	21,743	.....	7,582
17. Leeds and Grenville	982	1,156	6	751	954	.....	1,199
18. Lennox and Addington	673	1,376	20	558	321	.....	.....
19. Lincoln	340	1,938	100	1,660	3,565	.....	†2,500
20. Middlesex	870	296	38	688	23,112	1,050	.....
21. Norfolk	388	907	.....	349	1,628	.....	.....
22 Northumberland & Dur.	898	577	119	3,169	10,470	745	.....
23. Ontario	932	1,344	17	1,033	5,194	.....	6,638
24. Oxford	299	1,525	.....	250	4,383	300	1,378
25. Peel	649	913	92	.....	7,287	.....	4,237
26. Perth	184	1,132	10	403	1,787	3,254	730
27. Peterborough	492	651	.....	270	8,539	879	450
28. Prescott and Russell	287	194	.....	406	5,542	.....	14
29. Prince Edward	479	757	.....	520	1,019	1,450	470
30. Renfrew	454	1,070	513	581	‡27,782	25	442
31. Simcoe	1,552	908	936	1,122	6,741	‖80,100	594
32. Stormont, Dun. & Glen.	840	2,967	468	1,018	6,293	.....	648
33. Victoria	1,084	1,893	30	166	1,219	1,720	1,294
34. Waterloo	1,148	1,799	65	399	6,336	.....	100
35. Welland	282	1,249	22	435	19,759	.....	156
36. Wellington	697	210	.....	1,361	15,007	2,789	2,157
37. Wentworth	921	2,756	1,200	2,580	38,708	.....	.....
38. York	656	690	1,029	2,712	6,443	.....	5,388
Totals:							
1903	25,335	46,860	7,689	27,735	300,908	105,007	62,197
1902	22,747	35,061	10,679	15,799	211,415	23,657	148,025
1901	25,273	41,361	6,785	26,716	181,634	19,873	34,938
1900	22,713	37,960	6,673	19,267	139,281	23,829	78,813
1899	22,583	37,274	6,644	19,714	144,762	20,620	78,667
1898	24,876	33,628	7,807	19,825	136,491	18,252	140,330
1897	26,548	32,448	6,453	22,744	125,909	26,244	24,211
1896	25,650	38,335	19,058	11,816	107,621	39,621	76,963
1895	22,664	31,395	11,489	15,360	109,030	39,621	58,912
1894	22,113	37,389	28,334	16,393	195,095	63,808	29,963

* House of Refuge and site. †Including $1,000 for Stone Crusher. ‡Including $19,593 for Egansville bridge.
Good Roads Appropriations.

COUNTY MUNICIPALITIES.

of the County Municipalities for the year ending December, 31st, 1903.

Disbursements, 1903.—*Continued.*

Support of the poor and other charities.	Administration of justice, gaol maintenance, etc.	Grants to schools and other payments on education.	Sinking Fund investments and deposits.	Other investments and special deposits.	Debentures redeemed (principal).	Interest paid on debentures.	Refund of money borrowed for current expenses.	Interest or discount on loans and advances.	Non-resident taxes paid local municipalities.	Number.
$	$	$	$	$	$	$	$	$	$	
1,117	10,146	3,450			1,265	265			93	1
5,813	9,617	14,875		4,000	786	686	15,000	248	1,643	2
1,950	22,177	7,133	2,947			3,000	24,063	208	1,345	3
398	5,944	5,237	2,198			720	7,849	46	252	4
5,758	11,376	12,960			3,247	1,511	23,000	535	815	5
6,190	11,547	8,969			2,018	1,808	15,167	622	3,326	6
2,575	14,808	6,818			24,100	9,210	10,000	396	1,335	7
1,275	13,352	14,872	1,000			800			1,446	8
75	7,946	9,433						177	142	9
22	878	3,996					1,000	18	786	10
	5,618	5,833					9,000	182	570	11
240	16,365	12,276					33,054	1,646	1,626	12
	8,145	15,512	7,066			2,942	6,000	266	391	13
4,880	15,711	12,667			3,028	1,395	21,727	1,016	** 13,780	14
4,287	10,367	16,099			707	470	10,000	109	2,378	15
2,692	7,225	7,360			800	676	20,500	379	1,120	16
5,251	8,619	14,505	2,033		544	2,599	9,770	611	202	17
530	6,528	9,181			6,900	3,867		2	13	18
4,394	7,824	8,838					2,000	253	482	19
12,225	25,415	14,787	10,005		74,500	18,618			273	20
4,215	6,039	8,718						29	687	21
506	17,522	16,005	2,315			700	6,000	153	243	22
5,375	7,532	10,602			2,179	1,313	93,000	899	245	23
5,174	8,432	8,699			7,409	3,996			68	24
2,706	5,355	6,006					20,000	394	1,112	25
6,978	8,661	9,448	9,761		948	9,001	16,500	195	98	26
100	10,357	4,814	1,502		2,247	4,463	15,625	1,168	1,222	27
30	5,696	8,469			432	288		427	4,143	28
189	4,822	5,360						171	46	29
579	6,039	9,948	1,026		829	1,266	2,500	117	577	30
10,634	12,183	17,708			1,964	1,676	40,000	281	1,854	31
1,535	9,844	21,043			5,215	956	76,651	1,330	1,138	32
†2,060	8,532	7,649					19,000	622	759	33
8,735	7,846	8,529			2,890	776	25,322	581		34
4,543	9,745	7,828					10,542	386	991	35
8,198	11,624	10,693					12,000	283	80	36
825	12,852	6,691			1,123	676	68,132	140	287	37
7,582	16,970	13,054		8,000	7,397	4,369			1,016	38
129,636	390,259	386,065	39,853	12,000	150,528	78,047	613,402	13,890	46,584	
108,469	369,708	362,200	47,454	18,018	89,968	68,931	558,948	15,182	34,835	
114,322	441,876	359,746	31,824	24,998	109,737	73,396	473,612	13,656	40,847	
103,862	433,768	362,375	69,273	43,015	131,188	89,500	491,778	13,422	42,272	
102,511	434,721	363,949	46,941	31,000	103,706	72,022	444,459	15,390	70,386	
87,495	447,054	361,215	39,452	25,000	141,914	91,914	613,537	16,911	66,343	
88,782	468,832	360,176	52,525	37,321	163,391	88,379	704,425	18,676	83,313	
80,486	461,634	410,249	126,417	32,798	546,900	116,423	735,743	21,651	75,288	
66,856	485,032	490,081	182,622	10,000	137,209	119,928	638,216	21,266	112,915	
70,548	455,714	475,245	229,430		382,894	133,768	832,107	22,321	94,583	

** Including $12,352 on account of late Treasurer's shortages.

† Including $400 paid to Eldon and Lindsay re small-pox expenses.

STATISTICS OF ONTARIO—

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

County Municipalities.	Disbursements, 1903.—*Concluded.* Miscellaneous.	Total disbursements.	Assets on December 31, 1903. Cash in treasury.	Rates due from local municipalities.	Sinking Fund investments and deposits.	Other investments and special deposits.	Land, buildings, furniture, etc.
	$	$	$	$	$	$	$
1. Brant	605	21,492	11,700	.....	.....	.....	106,000
2. Bruce	3,278	72,000	6,668	4,835	.....	.....	80,000
3. Carleton	4,245	83,709	.....	23,457	26,898	.....	185,000
4. Dufferin	182	26,895	221	4,330	11,727	.....	40,000
5. Elgin	235	73,742	15,288	14,167	.....	.....	175,000
6. Essex	3,850	62,060	.....	24,473	.....	.....	111,000
7. Frontenac	365	79,973	111	29,761	.....	2,000	117,000
8. Grey	1,326	56,292	.....	5,860	8,458	*31,704	87,638
9. Haldimand	351	23,039	2,335	6,829	.....	.....	40,000
10. Haliburton	101	8,294	481	962	.....	.....	.....
11. Halton	605	29,360	3,214	985	.....	.....	45,000
12. Hastings	545	98,708	4	42,074	.....	.....	63,722
13. Huron	1,040	72,978	6,797	27,993	33,613	.....	77,000
14. Kent	4,243	91,142	774	16,786	.....	.....	‡180,000
15. Lambton	1,337	57,446	3,014	16,841	.....	.....	54,500
16. Lanark	1,247	77,236	3,062	1,972	.....	.....	83,000
17. Leeds and Grenville	858	53,501	199	19,429	25,558	.....	148,000
18. Lennox and Addington	65	31,970	14,323	7,658	.....	.....	55,000
19. Lincoln	514	36,942	4,582	7,609	.....	.....	104 000
20. Middlesex	800	187,638	.....	71,720	67,665	†22,800	86,000
21. Norfolk	505	26,097	7,684	1,305	.....	.....	59,000
22. Northumberland & Dur.	1,376	66,377	8,252	8,452	12,898	.....	51,000
23. Ontario	390	139,573	21,064	630	.....	.....	78,000
24. Oxford	343	46,960	44,626	10,710	.....	.....	190,000
25. Peel	1,280	51,843	251	.....	.....	.....	78,286
26 Perth	996	72,345	6,769	14,538	44,752	.....	125,000
27. Peterborough	571	56,261	.....	8,835	11,371	.....	93,355
28. Prescott and Russell	293	28,531	.....	12,213	.....	.....	36,594
29. Prince Edward	25	16,369	.....	.....	.....	.....	33,500
30. Renfrew	629	57,489	780	16,550	11,723	.....	50,000
31. Simcoe	1,093	185,470	27,624	40,287	.....	10,300	158,000
32. Stormont, Dun. & Glen.	360	133,897	5,472	10,061	.....	.....	61,000
33. Victoria	2,934	52,319	708	15,652	.....	.....	70,388
34. Waterloo	710	68,248	56	.....	.....	.....	89,000
35. Welland	747	58,770	992	4,323	.....	.....	124,314
36. Wellington	2,393	71,068	12,237	32,975	.....	.....	80,000
37. Wentworth	1,863	144,150	61,610	.....	.....	.....	‖195,000
38. York	1,974	82,817	21,297	23,618	.....	8,000	137,000
Totals:							
1903	44,274	2,603,001	292,195	527,890	254,663	74,804	3,547,297
1902	41,642	2,299,022	244,271	482,437	220,645	72,176	3,518,663
1901	47,042	2,185,025	190,104	610,246	245,972	38,100	3,296,654
1900	52,377	2,279,536	192,995	489,635	257,895	47,115	3,267,078
1899	57,211	2,194,462	220,596	533,868	234,921	34,400	3,228,327
1898	46,432	2,429,027	179,638	531,222	212,386	34,400	3,229,542
1897	129,695	2,578,023	227,866	550,055	220,010	57,519	3,143,600
1896	55,897	3,130,991	222,663	587,538	181,015	42,198	3,179,066
1895	39,320	2,731,769	221,381	663,043	449,946	36,400	3,140,808
1894	111,368	3,346,057	224,203	668,960	520,216		3,106,264

* Deposit to credit of General account.
† Including Hospital Trust Fund, $7,800, and loan to Victoria Hospital, $15,000.
‡ Including $76,550 for Iron Bridges. ‖ Including $115,000 for roads.

COUNTY MUNICIPALITIES.—*Concluded,*

of the County Municipalities for the year ending December 31st, 1903.—*Concluded.*

Assets 1903.—*Concluded.*				Liabilities on December 31, 1903.					
Miscellaneous.	Total assets.	School grants unpaid.	Railway debentures outstanding (principal).	All other debentures outstanding (principal).	Loans for current expenses and interest due on same.	Local municipalities for non-resident taxes.	Miscellaneous.	Total liabilities.	Number.
$	$	$	$	$	$	$	$	$	
.....	117,700	.....	.....	4,951	.....	.....	.....	4,951	1
3,219	94,722	.....	.....	16,362	.....	.....	2,284	18,646	2
.....	235,355	.....	.....	60,000	15,709	.....	.....	75,709	3
977	57,255	1,200	.....	12,000	.....	127	953	14,280	4
‡12,976	217,431	.....	.....	37,650	23,000	133	6,772	67,555	5
4,640	140,113	1,111	.....	43,167	23,601	.....	1,793	69,672	6
4,744	153,616	.....	92,900	.....	32,021	.....	62	124,983	7
1,006	134,666	35	.....	20,000	.....	170	.....	20,205	8
250	49,414	.....	.....	.....	.....	.....	988	988	9
46	1,489	20	.....	.....	.....	5	634	659	10
.....	49,199	.....	.....	.....	.....	.....	.....	.....	11
.....	105,800	2,000	.....	.....	43,863	20	4,176	50,059	12
.....	145,403	.....	.....	73,000	20,000	135	.....	93,135	13
8,291	205,851	2,396	.....	31,833	29,173	104	1,505	65,011	14
541	74,896	.....	.....	11,049	3,000	646	23	14,718	15
1,320	89,354	.....	.....	18,500	19,607	.....	.....	38,107	16
1,600	194,786	.....	.....	58,428	14,590	159	100	73,277	17
.....	76,981	.....	.....	61,000	.....	50	.....	61,050	18
1,100	117,291	.....	.....	1,000	§2,600	643	1,360	5,603	19
6,595	254,780	.....	.....	486,260	4,642	366	8,404	499,672	20
.....	67,989	.....	.....	.....	.....	.....	.....	.....	21
779	81,381	.....	.....	20,000	8,000	558	.....	28,558	22
.....	99,694	.....	.....	28,076	24,140	548	.....	52,764	23
990	246,326	179	.....	92,506	.....	263	2,428	95,376	24
556	79,093	.....	.....	6,000	.....	.....	1,120	7,120	25
2,200	193,259	.....	120,000	79,083	.....	.....	6,568	205,651	26
4,155	117,716	759	.....	58,145	12,154	892	3,997	75,947	27
.....	48,807	.....	.....	6,753	22,276	.....	226	29,255	28
374	33,874	.....	.....	.....	1,173	.....	.....	1,173	29
1,008	80,061	90	.....	42,145	10,000	265	1,356	53,856	30
10,892	247,103	.....	.....	140,906	.....	.....	†23,177	164,083	31
16,856	93,389	.....	.....	17,165	28,500	187	.....	45,852	32
1,942	88,690	.....	.....	.....	19,000	178	127	19,305	33
1,102	90,158	.....	.....	32,113	2,758	.....	516	35,387	34
2,240	131,869	.....	.....	.....	4,500	.....	12	4,512	35
3,757	128,969	3,538	.....	.....	21,000	579	*b*13,052	38,169	36
5,402	262,012	.....	.....	113,759	.....	.....	1,969	115,728	37
6,211	196,126	125	.....	99,258	.....	509	15,745	115,637	38
105,769	4,802,618	11,453	212,900	1,671,109	385,307	6,537	99,347	2,386,653	
96,038	4,634,230	12,304	237,000	1,492,392	291,942	20,192	101,113	2,154,943	
138,035	4,519,111	9,854	237,000	1,433,293	306,713	7,308	54,675	2,048,843	
142,918	4,397,636	7,657	258,500	1,459,491	300,807	11,295	66,342	2,104,092	
128,168	4,380,280	11,585	305,000	1,466,688	320,585	11,027	89,429	2,204,314	
151,806	4,338,994	11,524	322,000	1,459,056	327,025	25,889	68,664	2,214,158	
156,851	4,355,901	10,903	419,712	1,383,395	387,249	19,412	88,700	2,309,071	
153,955	4,366,435	12,642	408,223	1,440,749	425,383	21,540	60,142	2,368,689	
187,401	4,698,979	36,585	548,848	1,635,415	404,252	30,070	54,150	2,709,320	
191,831	4,711,474	35,954	740,474	1,519,698	459,674	18,518	69,199	2,843,517	

§ Including $500 for stone-crusher. *b* Including $9,350 due on roads.
* Including $404 previously omitted.
† Including $20,000 on Good Roads account.
‡ Including $11,220 payable by St. Thomas as share of cost of Court House.

STATISTICS OF ONTARIO CITY

City Municipalities, and Counties in which located.		Receipts and Disbursements. Balances from previous year.	Municipal and School taxes.	Liquor licenses.	Other licenses.	Fees, rents, tolls, fines, etc.	Water rates, electric light, etc.	Interest and dividends.	From Government, except for loans and schools.
		$	$	$	$	$	$	$	$
Belleville	1903	42	96,626	2,593	1,235	3,456	19,631	2,712	.....
(Hastings)	1902	408	90,785	2,553	1,069	3,607	19,036	3,129	.....
Brantford	1903	347	169,773	2,884	2,055	5,111	38,111	11,467	.....
(Brant)	1902	52	161,002	2,637	1,901	5,056	35,675	12,497	.....
Chatham	1903	2,376	151,770	3,189	516	2,066	18,423	170	.....
(Kent)	1902	3,566	94,396	3,162	344	1,697	21,818	716	.....
Guelph	1903	11,219	88,760	2,184	705	3,340	15,222	13,081	175
(Wellington)	1902	8,780	88,305	2,201	684	2,377	17,084	11,636	460
Hamilton	1903	5,787	597,126	10,070	4,918	46,093	195,118	15,872	† 6,703
(Wentworth)	1902	5,469	592,360	10,295	4,370	39,658	189,816	17,722	6,980
Kingston	1903	14,646	159,599	6,912	1,329	4,844	34,159	5,024	389
(Frontenac)	1902	1,428	156,619	7,157	1,330	4,878	35,554	5,776	388
London	1903	4,580	447,241	2,730	3,376	24,339	99,254	13,824	177
(Middlesex)	1902	759	431,459	2,719	3,036	23,336	97,148	23,900	41
Ottawa	1903	69,554	771,140	16,925	15,446	16,763	177,515	78,015	.....
(Carleton)	1902	10,420	786,724	15,398	5,161	19,009	249,262	108,613	.....
St. Catharines	1903	1,775	129,742	2,147	1,132	3,950	26,894	2,242	175
(Lincoln)	1902	3,151	116,907	3,850	1,104	4,244	28,597	3,026	.....
St. Thomas	1903	31,055	126,803	2,920	718	* 14,720	25,100	3,803	.....
(Elgin)	1902	12,654	122,267	3,280	786	638	21,344	5,130	.....
Stratford	1903	1,522	112,834	2,424	927	1,217	12,817	5,789	.....
(Perth)	1902	665	103,576	2,605	753	1,410	.....	4,978	.....
Toronto	1903	607,361	3,134,242	31,963	37,720	512,610	381,982	204,987	36,677
(York)	1902	292,365	3,219,934	32,205	33,897	508,460	351,492	192,548	4,633
Windsor	1903	3,400	160,070	3,170	678	4,374	42,468	9,326	175
(Essex)	1902	1,247	163,516	3,053	583	4,373	33,780	9,020	.....
Woodstock	1903	120	76,413	2,070	1,021	2,626	‡ 32,249	7,547	.....
(Oxford)	1902	15,461	67,314	2,000	963	3,027	‡2 26,784	7,349	.....
Totals:									
1903		753,784	6,222,139	92,181	71,776	645,509	1,118,953	373,859	44,471
1902		356,425	6,195,164	93,115	55,981	621,770	1,127,390	406,040	12,502
1901		225,906	5,760,508	91,927	53,438	578,242	1,007,060	364,549	15,406
1900		526,712	5,600,710	93,147	50,418	472,885	980,039	381,481	16,228
1899		833,413	5,280,927	95,795	50,360	434,535	1,092,419	369,007	19,162
1898		589,891	5,078,809	91,275	47,214	408,888	1,040,392	354,162	17,053
1897		715,390	4,966,002	95,449	41,754	391,691	1,028,673	309,612	18,638
1896		543,686	5,088,215	92,222	39,186	410,453	1,008,129	285,883	20,388
1895		378,541	5,164,106	93,893	41,637	376,122	983,534	248,532	20,641
1894		395,266	5,115,418	99,185	42,369	375,111	986,249	244,439	16,185

† Including $5,105 grant for House of Refuge and Hospital.
* Including $14,153 street railway earnings.
‡ Including $10,382 electric light rates.
‡2 Including $7,518 electric light rates.

MUNICIPALITIES FOR 1903 AND 1904.

Receipts and Disbursements.—*Continued.*

Refund from Sinking Fund and other investments.	Money borrowed for current expenses.	Money borrowed on debentures.		Miscellaneous.	Total receipts.	City Municipalities.
		For School purposes.	For all other purposes.			
$	$	$	$	$	$	
1,168	68,424	.....	5,125	3,208	204,220	Belleville.
3,161	† 92,344	.....	10,000	415	226,507	
32,178	9,100	.....	17,908	*b* 33,898	322,832	Brantford.
59,757	11,789	.....	21,962	12,816	325,144	
3,920	166,959	.....	45,596	*c* 17,170	412,165	Chatham.
5,697	74,500	.....	1,400	25,484	232,780	
48,876	246,600	16,700	*g* 262,369	2,840	712,071	Guelph.
35,517	3,000	.....	.....	2,385	172,429	
106,541	186,506	.....	274,651	87,074	1,536,259	Hamilton.
194,533	249,044	25,000	138,437	80,543	1,464,227	
15,966	50,000	.....	11,318	4,521	308,707	Kingston.
3,104	50,500	.....	30,995	5,795	303,524	
270,923	355,000	.....	128,053	5,304	1,354,801	London.
283,546	320,000	.....	157,977	4,353	1,348,274	
51,700	339,817	30,000	450,845	14,830	2,032,550	Ottawa.
3,180	245,244	30,000	275,230	90	1,748,331	
38,283	34,798	.....	32,185	18,141	291,464	St. Catharines.
7,995	62,458	.....	5,500	1,956	238,788	
1,237	332,500	35,000	47,755	1,219	622,830	St. Thomas.
2,189	211,000	28,000	23,826	1,517	432,631	
.....	147,913	.....	21,667	1,520	308,630	Stratford.
.....	65,000	.....	12,721	1,849	193,557	
1,041,055	1,286,480	26,000	855,084	164,766	8,320,927	Toronto.
1,106,345	1,489,094	247,200	339,117	261,763	8,079,053	
1,596	200,119	.....	58,659	8,369	492,404	Windsor.
109,510	95,191	2,000	41,249	3,224	466,746	
6,510	138,721	.....	26,149	2,149	295,575	Woodstock.
18,147	60,000	.....	30,797	3,819	235,661	
						Totals:
1,619,953	3,562,737	107,700	2,237,364	365,009	17,215,435	1903.
1,742,681	3,029,164	332,200	1,089,211	406,009	15,467,652	1902.
1,873,929	2,157,713	52,300	2,659,829	364,913	15,205,720	1901.
984,291	2,968,425	50,500	1,366,738	174,930	13,666,504	1900.
2,260,598	2,376,181	10,000	2,230,022	228,601	15,280,820	1899.
1,599,386	2,215,732	233,046	2,769,823	335,039	14,780,710	1898.
1,662,182	1,849,188	50,000	2,462,888	299,766	13,891,233	1897.
916,784	1,377,426	135,500	2,892,152	336,975	13,146,999	1896.
444,724	1,901,123	213,500	2,692,179	235,511	12,794,043	1895.
512,083	2,214,476	67,000	1,413,452	187,974	14,669,207	1894.

† Including $15,000 from Sinking Fund.

b Including $1,000 Carnegie donation for library; municipal wood yard $6,398, and plow and stove (municipal contribution to waterworks $5,588.

c Including $11,866 for Carnegie library.

* Including $20,000 mortgage to secure loan to Spring and Axle Co.

e Including unsold debentures $42,000 hypothecated to Canadian Bank of Commerce for advances for electric light plant and for loan to Iron Company on Industrial Mortgage.

g Including Carnegie donation for library, $10,000, and proceeds sale of land, $6,124.

STATISTICS OF ONTARIO CITY

Receipts and Disbursements.—*Continued.*

City Municipalities.		Allowances, salaries and commissions.	Printing, advertising, postage and stationery.	Insurance, heating and lighting of buildings.	Law costs (including salaries.)	Lighting of streets.	Water supply and fire protection.	Election of members of council.	Other expenses of municipal government.
		$	$	$	$	$	$	$	$
Belleville	1903	3,534	1,100	1,180	512	3,882	21,740	173	2,500
Hastings)	1902	4,956	443	1,197	.....	4,074	21,720	382	2,257
Brantford	1903	7,689	1,114	38	694	8,356	43,161	379	1,895
(Brant)	1902	5,043	1,466	1,296	4,556	8,939	33,224	137	2,936
Chatham	1903	5,485	706	481	284	5,256	20,674	.....	2,474
Kent)	1902	4,402	745	1,466	2,251	5,124	22,158	471	1,365
Guelph	1903	4,720	1,169	317	2,014	5,967	16,034	553	2,294
(Wellington)	1903	4,493	1,122	2,606	585	5,850	14,613	451	321
Hamilton	1903	29,909	2,648	7,145	4,905	36,881	101,321	1,113	10,084
Wentworth)	1902	30,312	2,706	4,076	4,797	35,405	93,625	1,017	10,677
Kingston	1903	9,407	1,403	2,377	873	7,939	25,841	340	3,776
(Frontenac)	1802	9,561	1,277	2,102	848	8,000	25,392	685	3,204
London	1903	15,468	2,556	4,474	1,901	25,692	59,495	592	10,862
(Middlesex)	1902	18,411	2,572	6,612	2,298	25,205	77,050	586	11,316
Ottawa	1903	20,993	3,638	4,856	1,250	31,108	181,709	776	7,078
(Carleton)	1902	19,389	5,462	9,331	4,330	30,202	125,162	775	5,039
St. Catharines	1903	6,821	1,173	1,106	515	7,596	16,976	614	1,580
Lincoln)	1902	5,224	1,087	908	550	7,570	18,528	314	310
St. Thomas	1903	7,127	1,233	2,016	2,542	8,353	23,992	218	1,999
Elgin)	1902	6,045	826	1,868	168	8,299	19,459	136	3,130
Stratford	1903	3,158	892	2,014	848	5,826	20,470	150	797
Perth)	1902	2,983	939	1,802	778	5,600	8,615	142	100
Toronto	1903	125,229	11,808	101,711	33,404	118,717	448,527	5,804	41,087
York)	1902	122,716	12,598	50,594	37,227	117,001	407,704	5,581	8,373
Windsor	1903	7,480	1,046	1,934	829	8,263	33,012	679	1,561
Essex	1902	5,311	811	656	621	9,606	31,454	649	2,046
Woodstock	1903	3,343	811	40	213	12,066	23,538	122	597
Oxford)	1902	2,660	808	194	266	10,352	23,325	256	807
Totals:									
1903		250,343	31,297	129,689	50,784	285,902	1,036,490	11,513	88,584
1902		241,506	32,862	84,708	59,275	281,227	922,029	11,582	51,881
1901		233,575	33,981	67,667	61,665	276,235	875,134	10,898	167,202
1900		225,453	37,267	57,789	54,672	255,806	839,160	11,651	125,152
1899		234,906	33,818	55,795	48,563	239,666	736,012	9,865	98,912
1898		188,219	37,406	46,892	54,270	251,379	828,061	11,743	89,402
1897		192,948	35,998	46,074	65,056	245,456	720,294	10,057	68,128
1896		199,288	31,346	30,175	62,468	254,797	716,095	13,298	111,696
1895		174,900	36,151	88,265	57,597	282,986	727,622	10,121	71,708
1894		153,305	32,343	50,723	69,380	278,626	750,721	17,483	64,691

MUNICIPALITIES FOR 1902 AND 1903.—*Continued.*

Receipts and Disbursements.—*Continued.*

Streets, bridges and parks.	Construction of waterworks, sewers and electric light.	Buildings and other property.	Board of Health, (including salaries.)	Support of the poor and other charities.	Administration of justice, police service, etc.	Payments on schools and education.	Sinking Fund investments and deposits.	City Municipalities.
$	$	$	$	$	$	$	$	
9,205	.....	.....	330	1,806	8,204	17,107	13,996	Belleville.
13,064	2,253	.....	411	1,906	9,186	15,965	15,890	
25,486	14,150	*c*15,500	4,340	6,790	7,900	41,665	32,234	Brantford.
32,292	14,867	19,792	4,454	9,727	7,979	37,562	32,582	
118,148	3,148	*f* 11,714	1,208	2,132	6,877	23,493	.....	Chatham.
37,106	3,993	.....	5,365	2,047	4,269	21,388	.....	
13,417	201,550	33,000	2,730	3,517	8,562	39,675	43,838	Guelph.
9,435	27,884	2,517	1,202	4,726	8,460	25,210	13,433	
247,147	47,280	.....	13,343	50,135	69,164	121,480	151,532	Hamilton.
256,752	57,676	.....	12,824	49,818	62,814	139,853	149,937	
29,169	4,337	115	1,774	3,672	15,548	37,484	23,767	Kingston.
16,652	15,517	.....	675	3,550	15,796	37,585	10,430	
112,884	54,732	8,595	4,100	28,017	46,772	121,028	165,157	London.
98,887	14,792	4,669	3,559	33,406	44,092	100,493	216,122	
178,160	63,766	*k* 66,027	11,106	36,272	62,764	183,314	130,755	Ottawa.
126,056	127,830	64,386	**2*30,160	10,364	57,213	190,298	75,185	
19,938	7,884	*l* 13,986	899	2,227	4,325	25,145	53,478	St. Catharines.
31,552	315	6,241	1,398	2,081	6,251	23,979	15,015	
35,111	972	*n*26,454	2,565	3,468	5,616	74,722	6,549	St. Thomas.
27,229	6,718	.....	971	4,001	4,813	43,533	7,290	
34,772	109,397	.....	1,580	982	4,974	23,250	17,140	Stratford.
11,510	5,744	.....	780	1,930	4,544	24 150	15,059	
†1,223,187	54,099	159,963	48,154	80,397	445,699	742,489	1,280,850	Toronto.
*1,126,658	68,272	177,003	48,923	83,816	433,909	760,674	1,028,391	
84,922	4,483	214	3,620	2,867	9,376	43,516	20,564	Windsor.
61,091	7,414	903	2,698	5,078	9,066	33,648	42,848	
37,193	21,137	.....	1,101	901	3,320	19,837	24,870	Woodstock.
27,181	14,991	.....	606	831	2,911	17,549	30,808	
								Totals.
2,168,739	586,935	335,568	96,850	223,183	699,101	1,514,205	1,964,730	1903.
1,875,465	368,266	275,511	114,026	213,281	671,303	1,471,887	1,652,990	1902.
1,688,698	402,998	196,787	105,402	188,651	621,219	1,300,982	1,691,603	1901.
1,884,182	644,059	197,132	71,332	199,077	560,397	1,430,853	956,990	1900.
1,618,975	561,181	376,477	72,770	183,319	550,702	1,130,466	2,363,835	1899.
1,261,798	334,439	467,118	67,205	175,233	526,198	1,258,986	2,154,395	1898.
1,398,771	373,916	555,481	68,145	175,327	508,054	1,068,928	2,079,598	1897.
830,892	354,112	527,074	63,648	157,318	508,640	1,141,815	1,543,124	1896.
1,254,390	491,655	243,383	59,416	147,994	517,628	1,134,140	1,233,643	1895.
1,201,237	404,513	439,197	78,510	150,597	516,568	1,044,689	913,362	1894.

c Including $15,000 for "Carnegie Library."
f Including $10,397 for "Carnegie Library."
k Including Carnegie Library Building $52,605, and Hospital Building $8,180.
l For Carnegie Library Building and site.
n Including $25,611 for operating and maintaining Street Railway.
† Including $66,918 for street cleaning and $41,358 for scavenging.
* Including $9,623 for maintenance of crematory, $82,572 for scavenging and $79,519 for street cleaning.
*2 Increase due to smallpox visitation.

STATISTICS OF ONTARIO CITY

Receipts and disbursements.—*Continued.*

City Municipalities.		Other investments and special deposits.	Debentures redeemed. Principal.	Debentures redeemed. Interest.	Interest or discount on loans, etc.	Refund of money borrowed for current expenses.	Discount on debentures sold.
		$	$	$	$	$	$
Belleville	1903	1,383	.....	29,689	1,424	85,122	.....
(Hastings)	1902	2,086	.....	29,832	2,782	95,800	.....
Brantford	1903	14,284	6,092	47,094	1,209	23,061	.....
(Brant)	1902	13,367	8,250	46,726	1,096	24,110	.....
Chatham	1903	30,515	29,738	27,270	4,828	112,459	.....
(Kent)	1902	†22,283	22,406	26,776	4,151	35,000	.....
Guelph	1903	284,634	14,500	26,430	2,649	.....	.....
(Wellington)	1903	.....	5,200	27,037	340	.....	.....
Hamilton	1903	408	92,944	163,685	10,562	249,044	3,390
(Wentworth)	1902	8,143	85,148	162,715	11,954	201,581	.....
Kingston	1903	2,281	24,849	41,694	4,549	50,000	.....
(Frontenac)	1902	182	33,542	39,393	4,522	34,745	.....
London	1903	129,237	49,451	115,852	3,016	355,000	.....
(Middlesex)	1902	41,866	127,294	120,586	1,454	377,303	.....
Ottawa	1903	46,200	238,908	196,238	23,402	428,412	.....
(Carleton)	1902	15,749	50,384	251,142	31,209	405,264	.....
St. Catharines	1903	6,033	.....	38,087	877	52,458	150
(Lincoln)	1902	2,578	2,850	39,109	1,872	50,800	.....
St. Thomas	1903	9,378	28,329	28,266	3,053	330,500	1,413
(Elgin)	1902	1,237	29,734	29,558	1,651	181,500	73
Stratford	1903	.....	.....	23,593	1,983	40,000	95
(Perth)	1902	.....	.....	22,273	2,545	69,000	.....
Toronto	1903	159,566	509,015	824,749	76,009	1,471,547	26,040
(York)	1902	229,280	752,695	834,762	79,872	840,784	15,784
Windsor	1903	¶18,089	23,460	34,026	5,942	167,175	720
(Essex)	1902	764	107,619	35,539	3,777	91,200	.....
Woodstock	1903	4,755	1,968	23,438	1,518	110,500	.....
(Oxford)	1902	4,540	2,891	26,633	722	63,320	.....
Totals:							
1903		706,763	1,019,251	1,620,111	141,021	3,475,278	31,808
1902		342,075	1,228,023	1,692,081	147,947	2,470,407	15,857
1901		375,529	1,397,301	1,723,203	104,477	2,769,429	37,984
1900		423,302	1,421,313	1,675,963	122,179	1,911,685	6,856
1899		250,104	1,194,529	1,622,380	115,814	2,930,049	9,283
1898		157,870	2,342,718	1,593,108	107,346	1,705,883	5,010
1897		122,431	2,176,917	1,632,664	99,369	1,250,683	3,625
1896		252,250	2,009,335	1,625,955	92,125	1,336,975	30,219
1895		22,517	1,230,919	1,590,748	91,228	2,332,320	36,010
1894		136,564	3,196,946	1,595,713	101,462	2,691,441	107,758

† Including $20,000 on mortgage.
¶ Including $17,476 deposit to credit of Waterworks Commissioners.

MUNICIPALITIES FOR 1902 AND 1903.—*Continued.*

Receipts and disbursements.—*Concluded.*			Assets on December 31.				
Library.	Miscellaneous.	Total disbursements.	Cash in treasury (exclusive of S. Fund.)	Taxes in arrears.	Sinking Fund investments and deposits.	Other investments and special deposits.	City Municipalities.
$	$	$	$	$	$	$	
800	533	204,220	.....	65,381	90,253	57,656	Belleville.
200	2,061	226,465	42	69,368	76,257	57,441	
2,700	16,729	322,560	272	2,452	263,839	87,284	Brantford.
2,400	11,996	324,797	347	4,519	236,794	99,989	
1,200	1,749	409,839	2,326	37,803	....	51,610	Chatham.
2,493	5,145	230,404	2,376	72,226	.....	25,015	
1,967	2,378	711,915	156	4,900	139,585	*h*477,634	Guelph.
1,764	3,961	161,210	11,219	9,400	144,623	193,000	
13,350	101,880	1,529,350	6,909	257,307	419,076	125,865	Hamilton.
13,250	63,360	1,458,440	5,787	289,630	372,699	126,843	
400	3,426	295,021	13,686	59,462	62,160	24,182	Kingston.
.....	*25,220	288,878	14,646	63,271	54,178	22,082	
8,374	7,500	1,330,755	24,046	37,677	360,558	1,028,605	London.
10,707	4,414	1,343,694	4,580	42,880	297,749	1,067,943	
80	59,017	1,975,829	56,721	220,000	2,036,440	16,527	Ottawa.
.....	43,837	1,678,777	69,554	237,381	1,798,754	128,958	
2,118	*m*24,589	288,575	2,889	15,893	51,599	65,289	St. Catharines.
2,371	16,110	237,013	1,775	20,340	34,831	60,829	
1,250	7,933	613,056	9,774	25,467	109,933	9,378	St. Thomas.
900	22,437	401,576	31,055	23,487	103,384	1,237	
1,600	11,921	305,442	3,188	39,849	131,417	.....	Stratford.
1,200	§12,341	192,035	1,522	29,806	114,277	.....	
31,593	42,971	8,062,615	258,312	861,314	6,091,246	.....	Toronto.
30,244	*a*198,831	7,471,692	607,361	893,259	5,691,885	.....	
3,257	14,254	491,269	1,135	47,385	180,724	*r*18,294	Windsor.
5,176	5,371	463,346	3,400	41,185	161,051	910	
150	3,797	295,215	360	2,267	205,513	13,798	Woodstock.
.....	3,890	235,541	120	11,172	182,613	13,583	
							Totals:
68,839	298,677	16,835,661	379,774	1,677,817	10,142,343	1,976,122	1903.
70,705	418,974	14,713,868	753,784	1,807,924	9,269,095	1,797,830	1902.
57,460	461,115	14,849,295	356,425	2,144,879	9,009,740	1,804,801	1901.
57,025	271,297	13,440,598	225,906	2,172,564	8,729,769	1,915,869	1900
56,576	200,111	14,754,108	526,712	2,087,251	8,560,436	1,800,200	1899.
55,775	245,592	13,966,046	814,664	2,194,723	8,072,637	1,777,478	1898.
57,666	345,756	13,301,342	589,891	2,205,219	7,381,842	1,785,394	1897.
57,047	482,546	12,432,208	714,791	1,992,178	6,831,025	1,833,607	1896.
51,631	363,385	12,250,357	543,686	1,975,909	6,277,778	1,496,886	1895.
	294,857	14,290,666	378,541	1,818,778	6,963,222		1894.

* Including $20,000 to Queen's College.
† Including $5,645 disbursed re citizen's coal yard.
m Including $8,000 bonuses to manufacturers.
§ Including $8,977 tax rebates.
a Including $167,520 paid for redemption of debentures matured in 1901, but not then presented for payment, but deposits therefor were made
h Including $259 100 unsold debentures hypothecated to Canadian Bank of Commerce for sundry advances, $16,000 loan to Light and Power Co., and $45,000 loan to Page & Henry Iron Co.
r See note *q* under disbursements.

STATISTICS OF ONTARIO CITY

Assets on December 31st.—*Concluded.*

City Municipalities.		Land, buildings, library, etc.	Waterworks and electric light plant.	Other property, (cemetery, fire-halls, etc.)	Miscellaneous.	Total assets.	Local school rates unpaid.	Aid to railways.
		$	$	$	$	$	$	$
Belleville	1903	93,542	193,111	.....	93,482	593,425	.....	.....
(Hastings)	1902	93,542	193,111	.....	‡ 93,438	583,199	.....	.....
Brantford	1903	304,763	347,540	28,163	*d* 215,468	1,249,781	.....	.....
(Brant)	1902	360,953	342,194	28,163	211,961	1,284,920	.....	.....
Chatham	1903	115,976	210,921	44,428	286,495	749,559	.....	.....
(Kent)	1902	152,770	209,921	21,700	171,231	655,239	1,401	.....
Guelph	1903	174,398	306,102	9,500	123,416	1,235,691	1,121	193,000
(Wellington)	1902	129,949	151,100	9,500	76,227	725,018	2,040	193,000
Hamilton	1903	894,316	2,023,198	* 881,564	853,547	5,462,442	.....	250,000
(Wentworth)	1902	883,788	2,006,850	872,092	676,366	5,234,055	.....	250,000
Kingston	1903	248,186	288,633	30,505	24,400	751,214	3,581	60,430
(Frontenac)	1902	248,261	348,801	30,504	26,757	808,500	1,090	61,729
London	1903	536,500	860,504	18,750	37,382	2,904,022	354	325,000
(Middlesex)	1902	541,546	898,136	14,750	35,520	2,903,104	1,733	325,000
Ottawa	1903	538,000	2,100,000	148,000	1,011,314	6,127,002	.....	370,000
(Carleton)	1902	532,750	2,075,000	148,000 ¶	1,142,923	6,133,320	.....	370,000
St. Catharines	1903	136,138	372,080	45,730	118,102	807,720	66	61,320
(Lincoln)	1902	119,592	364,818	45,730	125,327	773,242	.....	61,320
St. Thomas	1903	146,953	152,000	17,500	17,758	488,763	.....	.....
(Elgin)	1902	114,544	152,000	17,500	37,468	480,675	.....	.....
Stratford	1903	93,400	106,000	24,000	*o* 55,214	453,068	.....	60,000
(Perth)	1902	74,122	.....	24,000	4,481	248,208	.....	60,000
Toronto	1903	9,883,185	4,349,385	299,773	2,664,442	24,407,657	.....	1,143,718
(York)	1902	9,900,732	4,349,385	299,773	2,102,055	23,844,450	.....	1,143,718
Windsor	1903	*s* 92,000	302,000	18,500	¶ 162,045	822,083	.....	.....
(Essex)	1902	69,700	302,000	18,500	133,972	730,718	2,000	.....
Woodstock	1903	57,960	217,742	15,300	57,139	570,079	.....	.....
(Oxford)	1902	57,960	211,575	15,320	21,492	513,835	887	.....
Totals:								
1903		13,315,317	11,829,216	1,581,713	5,720,204	46,622,506	5,122	2,463,468
1902		13,280,209	11,604,891	1,545,532	4,859,218	44,918,483	9,151	2,464,767
1901		13,225,204	11,412,835	1,506,473	4,093,443	43,553,800	6,036	2,466,009
1900		13,184,319	11,257,342	1,539,274	3,948,867	42,973,910	30,543	2,356,533
1899		12,997,730	10,923,162	1,517,122	3,956,453	42,369,072	12,125	2,399,202
1898		12,699,496	10,550,642	1,506,685	3,902,440	41,518,765	24,129	2,431,057
1897		12,447,827	10,481,486	1,461,036	3,673,267	40,025,962	9,368	2,443,600
1896		12,370,784	10,421,768	1,389,534	4,016,053	39,569,740	16,562	2,492,981
1895		12,272,758	10,398,892	1,437,563	3,738,741	38,142,207	25,988	2,165,327
1894		11,917,357	10,107,936	1,313,667	4,017,423	36,516,934	27,194	2,164,754

s Including Carnegie Library building. * Including $825,416 for sewerage system. ‡ Including $25,500 Butterfield Mtge. ¶ Including $150,000 for Iron Bridges, reported for first time in city returns.
d Including $65,859 for sewers. *o* Including $45,000 for sewerage system.

MUNICIPALITIES FOR 1902 AND 1903.—*Concluded.*

Liabilities on December 31.

Debentures outstanding, principal.

Schools.	Local improvements.	Municipal works.	All other objects.	Loans for current expenses.	Miscellaneous.	Total liabilities.	City Municipalities.
$	$	$	$	$	$	$	
8,500	38,082	192,000	476,000	55,764	950	771,296	Belleville.
8,500	32,957	192,000	476,000	72,463	250	782,170	
70,997	197,618	339,000	550,833	9,100	4,736	1,172,284	Brantford.
71,436	188,863	334,000	552,333	23,061	2,440	1,172,133	
.....	161,438	158,740	314,509	195,856	14,177	844,720	Chatham.
.....	154,377	163,415	301,037	141,056	1,176	762,462	
34,400	96,699	205,600	333,500	261,600	4,457	1,130,377	Guelph.
17,700	94,330	52,100	241,500	15,000	5,249	620,919	
240,584	340,666	1,179,116	2,213,956	186,306	33,844	4,444,472	Hamilton.
256,254	205,424	1,142,116	2,188,821	249,044	33,937	4,325,596	
54,300	162,598	251,050	440,950	50,500	21,114	1,044,523	Kingston.
57,500	151,280	257,000	455,350	51,500	22,152	1,057,601	
100,100	445,165	809,629	1,371,811	15,000	78,483	3,145,542	London.
100,100	409,563	949,629	1,188,811	15,000	64,279	3,054,115	
357,900	862,064	1,427,250	2,965,889	301,002	146,946	6,431,051	Ottawa.
328,300	724,853	1,524,584	2,793,429	389,596	146,863	6,277,625	
13,000	74,010	40,000	755,140	19,798	9,690	973,024	St. Catharines.
13,000	51,825	30,000	755,140	37,458	7,843	956,586	
107,116	215,036	116,022	277,151	48,027	.....	763,352	St. Thomas.
73,885	* 211,284	116,675	259,052	46,000	16,434	723,330	
20,500	95,287	.....	354,500	122,913	1,442	654,642	Stratford.
20,500	81,620	.....	346,500	15,000	1,930	525,550	
1,846,329	6,407,597	3,895,094	*p*8,514,775	1,286,480	1,348,747	24,442,740	Toronto.
1,834,004	6,267,243	3,876,279	*p*8,344,200	1,471,547	1,218,295	24,120,286	
94,636	297,727	131,541	177,804	107,134	1,705	810,547	Windsor.
96,535	261,985	117,420	190,569	77,584	3,660	749,753	
30,700	76,426	187,472	270,528	46,122	4,128	615,376	Woodstock.
30,700	68,545	186,154	255,546	17,901	4,111	563,844	
							Totals :
2,979,062	9,470,413	8,932,514	19,017,346	2,705,602	1,670,419	47,243,946	1903.
2,908,414	8,904,149	8,941,372	18,318,288	2,622,210	1,523,619	45,691,970	1902.
2,661,742	9,239,055	8,656,693	18,313,517	2,080,810	1,548,273	44,972,135	1901.
2,599,438	8,695,233	8,405,502	17,965,483	2,693,978	1,641,886	44,388,596	1900.
2,596,676	9,499,774	8,327,975	17,202,637	1,607,923	1,594,357	43,240,669	1899.
2,557,843	9,748,620	7,487,622	16,281,386	2,212,098	1,602,554	42,345,309	1898
2,410,542	9,663,424	7,807,042	15,521,769	1,709,406	1,607,280	41,172,431	1897.
2,392,624	10,308,596	7,676,351	14,600,678	1,110,364	1,919,232	40,517,388	1896.
2,303,921	10,606,307	7,234,656	14,142,703	1,069,423	1,596,634	39,144,959	1895.
2,146,665	10,779,224	12,716,592	6,970,919	1,505,226	1,898,733	38,209,307	1894.

* Including $6,586 previously omitted from returns.

† See note † under Assets.

p Including $400,000 short dated debentures secured by taxes in arrears.

FINANCIAL STATEMENT—TOWNSHIP MUNICIPALITIES.

Summary statement showing the totals for all townships in Ontario of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1894-1903.

Schedule.	1903.	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.
RECEIPTS.	$	$	$	$	$	$	$	$	$	$
Balance from the previous year	724,152	678,919	574,557	502,223	539,813	541,624	444,150	559,452	478,431	476,233
Ordinary municipal revenue:										
Municipal and school taxes	5,302,543	4,986,517	4,943,691	4,812,372	4,675,154	4,462,288	4,598,830	4,286,861	4,478,627	4,573,620
Licenses (liquor and other)	45,666	42,495	47,532	41,736	41,878	43,019	46,723	47,758	49,539	62,084
Fees, rents, fines, etc	10,995	14,859	14,647	14,265	13,811	12,716	12,423	11,873	12,363	
Refund of loans, investm'ts & deposits	219,361	152,856	121,817	207,790	164,532	505,476	199,050	273,483	232,825	291,747
Interest and dividends	61,927	57,794	55,847	55,170	55,332	75,461	72,385	65,774	68,217	
Loans:										
Money borrowed for current expenses	699,904	599,391	640,363	542,259	514,505	456,217	450,533	548,495	525,677	591,014
Money borrowed on debent's for—										
School	79,673	79,296	86,459	57,886	69,572	69,597	56,673	49,982	61,850	54,324
Drainage	305,589	199,541	251,639	227,323	229,131	261,022	293,924	163,023	260,269	285,460
Other purposes	27,773	73,687	41,448	31,200	59,975	48,438	20,800	49,445	96,457	
Premiums on debentures sold	6,354	5,578	3,841	5,406	6,966	7,690	11,525	4,068	11,798	
Grants from county for roads, etc	18,941	17,916	17,877	16,814	15,337	15,895	22,879	39,467	36,395	204,930
Miscellaneous	148,840	106,372	108,529	79,874	106,081	123,393	78,621	86,486	94,222	
Totals	7,651,718	7,015,221	6,908,247	6,594,318	6,492,087	6,622,836	6,308,516	6,186,167	6,406,670	6,539,412
DISBURSEMENTS.										
Expenses of Municipal Government:										
Allowances, salaries & commissions	324,022	316,647	310,618	309,162	309,387	294,313	292,206	287,272	285,335	285,560
Law costs, including salaries	41,000	55,147	58,316	49,098	43,372	43,690	51,865	34,090	60,491	138,693
Other expenses of municipal gover't	110,079	103,441	97,959	99,468	105,323	96,166	93,321	89,827	84,952	
Construction of works:										
Roads and bridges	1,193,778	964,322	962,810	894,104	881,068	772,947	706,091	702,212	639,241	796,775
Buildings and other works	17,805	23,256	18,177	15,844	19,896	15,381	21,891	16,129	8,883	7,393
Drainage works	350,090	219,891	312,305	284,553	327,578	311,311	275,869	238,919	227,692	297,286

Support of the poor and other charities	52,782	55,581	54,953	54,417	55,943	59,871	58,763	58,543	66,655	65,621	
County treasurer for levy	986,269	944,223	937,934	953,191	976,863	910,094	958,975	984,669	1,091,953	1,086,752	
Payments on schools and education	2,221,907	2,119,763	2,076,590	1,984,747	1,960,373	1,926,978	1,935,503	1,813,537	1,796,237	1,831,241	
Sinking fund investments & deposits	69,930	92,770	29,842	79,947	69,128	114,112	89,621	118,214	123,143	285,334	
Other investments & special deposits	206,278	78,025	144,171	80,341	72,897	121,068	160,427	161,024	162,983		
Loans repaid:											
Debentures redeemed (principal)											
School	70,942	67,138	59,378	67,215	63,834	60,969	66,140	65,230	67,409	433,996	
Drainage	207,202	221,222	210,673	211,999	196,409	194,044	182,884	219,201	219,588		
All other	58,935	55,268	55,798	99,006	131,549	390,029	72,186	100,693	85,851		
Interest on loans, advances, debent's	143,125	145,098	139,610	143,441	145,803	177,617	168,620	177,504	183,553	180,027	
Moneys borrowed for current expenses	695,141	629,456	585,982	558,236	498,661	430,588	518,518	537,482	572,968	524,212	
Board of Health (including salaries)	62,355	66,530	46,860	24,378	25,391	17,979	17,449	15,298	22,293	128,091	
Miscellaneous	112,243	133,491	127,352	110,614	115,389	145,866	96,563	121,933	147,991		
Totals	6,923,883	6,291,069	6,229,328	6,019,761	5,989,864	6,083,023	5,766,892	5,742,017	5,847,218	6,060,981	
ASSETS.											
Cash in treasury	727,835	724,152	678,919	574,557	502,223	539,813	541,624	444,150	559,452	478,431	
Taxes in arrears	1,313,113	1,279,623	1,191,743	1,285,700	1,383,475	1,438,023	1,412,171	1,577,267	1,610,480	1,596,099	
Sinking Fund investments & deposits	523,197	385,289	182,381	234,632	233,255	213,767	498,619	452,819	425,269	1,442,922	
Other investments & special deposits	788,371	881,224	1,080,904	979,676	1,028,667	1,078,088	1,067,449	1,062,530	1,069,519		
Lands, buildings and other property	483,497	465,572	438,951	429,001	409,171	414,704	403,904	379,729	355,305	354,010	
Miscellaneous	999,343	1,018,462	1,098,559	918,667	892,919	619,615	615,822	564,968	436,379	456,907	
Totals	4,835,356	4,754,322	4,671,457	4,422,233	4,449,710	4,304,010	4,539,589	4,481,463	4,456,404	4,328,369	
LIABILITIES.											
County levy	388,561	369,977	372,468	380,823	413,738	428,262	438,311	474,425	574,634	563,909	
Local school rates	301,401	283,875	271,587	278,484	281,551	299,667	292,071	333,291	299,082	280,176	
Debentures outstanding (principal) for											
Aid to railways	433,090	449,291	500,384	509,475	584,608	621,053	984,196	1,015,669	1,057,852	1,058,761	
Schools	504,164	495,433	486,026	458,945	468,180	462,438	454,119	463,586	478,834	481,665	
Drainage	1,492,873	1,392,053	1,414,042	1,370,076	1,355,452	1,322,734	1,253,902	1,142,862	1,206,232	1,401,841	
Other purposes	262,600	279,624	207,412	215,671	208,344	243,473	224,874	244,787	249,725		
Due Sinking Fund	34,371	33,879	13,063	15,143	14,515	20,171	20,857	18,480	25,001	382,096	
Loans for current expenses & interest	290,932	291,908	344,173	288,931	303,855	281,720	257,215	331,123	314,116		
Miscellaneous	270,433	187,110	189,255	199,947	179,821	208,691	167,768	158,481	174,752	127,699	
Totals	3,978,425	3,783,150	3,798,410	3,717,495	3,810,064	3,888,209	4,093,313	4,182,704	4,380,228	4,296,147	

FINANCIAL STATEMENT—VILLAGE MUNICIPALITIES.

Summary showing the totals for all villages in Ontario of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1894-1903.

Schedule.	1903.	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.
RECEIPTS.	$	$	$	$	$	$	$	$	$	$
Balance from previous year	107,414	104,387	99,484	97,738	88,900	82,474	88,589	78,973	67,269	72,950
Ordinary municipal revenue:										
Municipal and school taxes	638,119	625,665	592,819	582,027	552,142	578,449	576,392	541,849	545,809	526,672
Licenses (liquor and other)	31,236	29,971	31,316	27,571	29,296	31,771	33,687	34,487	34,872	42,746
Fees, rents, fines, etc.	12,836	11,100	9,937	10,234	9,675	9,778	8,301	8,941	8,738	
Water rates, etc.	41,011	39,916	35,244	25,659	19,492	25,672	17,765	14,897	15,344	12,989
Refund of loans and special deposits	33,415	44,378	29,432	26,679	41,216	31,569	37,047	22,235	25,905	17,266
Interest and dividends	5,160	6,465	5,869	4,045	5,290	5,309	5,932	5,650	6,223	
Loans for current expenses	349,598	324,905	313,084	204,886	174,967	180,411	180,273	165,279	176,428	135,745
Money borrowed on debentures for—										
Schools	18,902	9,198	750	.....	17,875	28,350	22,100	7,443	29,100	23,050
Other purposes	231,403	257,260	213,074	95,506	121,002	131,450	92,690	84,706	67,797	79,577
Premiums on debentures sold	1,173	2,654	1,276	.....	.....	4,719	6,519	1,876	5,099	
County grants	1,718	1,956	1,456	.....	.....	1,966	2,391	4,148	2,887	32,731
Miscellaneous	26,338	14,114	18,961	17,556	18,321	14,533	21,453	18,309	15,340	
Totals	1,498,323	1,471,969	1,352,702	1,091,901	1,078,176	1,126,451	1,093,139	988,793	1,000,811	943,726
DISBURSEMENTS.										
Expenses of municipal government:										
Allowances, salaries and commissions	40,651	39,573	37,024	35,562	34,383	34,967	35,661	36,604	37,793	37,139
Street l't'g, water supply, fire protect'n	84,284	80,547	67,811	60,190	47,806	51,680	51,304	47,832	46,161	41,590
Law costs (including salaries)	6,682	6,349	5,149	9,220	5,481	5,132	7,794	6,119	5,983	28,392
Other expenses of government	25,890	25,480	23,210	22,420	22,340	22,776	22,986	22,134	23,054	
Construction works:										
Streets, bridges and parks	188,900	197,323	162,904	145,915	128,569	107,222	98,659	98,290	99,662	93,572
Buildings and other works	18,630	24,383	15,278	10,768	9,016	30,044	45,048	11,891	20,570	65,191
Water and electric light works	89,201	101,015	102,118	55,754	91,582	61,097	29,223	30,385	39,024	
Support of the poor and other charities	5,287	4,518	4,709	6,249	5,456	6,836	5,365	5,842	6,552	5,858
Administration of justice, police service	9,056	9,791	9,358	8,261	8,860	11,440	9,761	8,477	7,952	7,064

County treasurer for levy	47,548	45,186	44,419	38,553	40,466	43,019	43,621	36,116	42,424	44,628
Payments for schools and education	247,128	225,327	211,381	214,789	223,104	243,139	250,080	223,983	242,466	232,204
Sinking Fund investments and deposits	34,759	35,301	36,512	24,324	22,215	25,185	20,717	21,461	14,606	35,679
Other investments and special deposits	43,973	55,633	37,473	14,146	17,618	16,492	11,870	7,197	12,276	
Debentures redeemed { Schools	14,401	16,372	18,024	18,686	25,947	24,185	25,229	31,542	18,851	52,120
Debentures redeemed { All other	57,730	54,847	45,751	48,799	46,327	72,667	53,196	72,300	35,135	
Interest on loans and debentures	75,359	73,198	67,852	61,713	58,264	66,119	65,401	68,207	68,612	62,352
Money borrowed for current expenses	347,146	297,019	298,312	188,710	157,058	182,784	192,860	137,119	176,133	134,536
Board of Health	7,355	10,050	8,676	3,240	3,018	2,767	2,931	2,740	2,962	36,132
Miscellaneous	47,929	62,544	52,354	25,118	32,928	28,502	38,959	31,366	21,217	
Totals	1,391,909	1,364,456	1,248,315	992,417	980,438	1,036,053	1,010,665	899,605	921,433	876,457
ASSETS.										
Cash in treasury	106,414	107,513	104,387	99,484	97,738	90,398	82,474	89,188	79,378	67,269
Taxes in arrears	107,846	117,846	117,912	110,982	125,033	147,720	152,293	161,795	147,273	139,335
Sinking Fund investments and deposits	* 109,051	110,005	115,369	87,328	85,383	95,125	87,651	92,526	86,181	132,914
Other investments and special deposits	* 155,901	128,619	76,599	59,247	49,401	47,142	45,882	47,278	48,742	
Water works and electric light plant	*a* 713,181	730,545	640,658	542,864	512,294	523,792	455,600	381,913	368,262	802,525
Other buildings and property	595,841	591,072	573,934	563,398	542,684	542,893	514,177	493,148	495,053	
Miscellaneous	155,446	172,950	131,181	109,646	76,329	49,358	62,116	38,798	61,606	57,178
Totals	1,943,680	1,958,550	1,760,040	1,572,949	1,488,862	1,496,428	1,400,193	1,304,646	1,286,495	1,199,221
LIABILITIES.										
County levy	17,903	16,109	17,259	18,606	15,836	18,324	19,533	20,845	16,692	15,041
Local rates	56,463	60,061	58,180	52,303	58,683	56,346	62,659	65,478	55,432	50,089
Debentures (principal) outstanding for—										
Aid to railways	26,331	30,486	33,414	36,768	50,234	63,150	72,617	92,132	115,017	119,280
Schools	* 236,221	241,279	248,453	265,727	284,413	316,908	312,743	320,872	344,971	334,004
Other purposes	* 1,332,222	1,261,542	1,056,101	885,424	825,251	844,382	774,925	750,092	715,815	679,658
Due sinking funds	*b* 7,700	15,887	16,014	16,938	16,495	20,001	19,014	17,900	13,569	68,755
Loans for current expenses and interest	* 129,128	135,323	106,824	90,778	75,092	65,422	70,019	83,127	60,004	
Miscellaneous	38,170	50,513	64,917	43,782	58,167	44,878	59,103	54,540	55,008	46,851
Totals	1,844,138	1,811,200	1,601,162	1,410,326	1,384,171	1,429,414	1,390,613	1,404,986	1,376,508	1,313,678

* The decreases in these items not otherwise accounted for are due to the accounts of the former villages of Alexandria and East Toronto, incorporated as *towns* in 1903, having been transferred to towns, and included in Table on pages 146 and 147 of this report.

a. The electric and other light plants in *villages* in 1903, aggregated $100,344, as follows: Acton, $10,000; Beeton, $6,150; Campbellford, $19,000; Dundalk, $6,500; Hagersville, $684; Iroquois, $8,750; Markham, $4,100; Milverton, $200; Morrisburg, $30,000; Port Colborne, $425; Springfield, $175; Tilbury, $1,000; Tottenham, $6,300; Weston, $7,000; Woodbridge, $30; Woodville, $30.

b. Including Huntonburg, $175; Lucknow, $4,076; Sundridge, $1,181; Tilbury, $62.

FINANCIAL STATEMENT—TOWN MUNICIPALITIES.

Summary showing the totals for all towns in Ontario of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1894—1903.

Schedule.	1903.	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.
RECEIPTS.	$	$	$	$	$	$	$	$	$	$
Balance from previous year	*216,504	248,360	320,525	297,876	207,975	199,704	257,955	244,963	165,782	149,398
Municipal and school taxes	2,776,960	2,490,434	2,347,365	2,208,031	2,160,904	2,098,141	2,037,088	1,964,716	1,971,028	1,932,387
Licenses (liquor and other)	118,761	111,076	116,683	94,073	105,842	104,097	107,539	108,549	111,522	176,600
Fees, rents, fines, etc	78,296	71,313	70,671	65,994	63,589	58,454	58,265	58,202	57,380	
Water rates, electric light rates, etc.	706,210	521,505	402,485	344,288	289,547	223,691	195,797	164,725	152,224	119,172
Refund of loans and special deposits	268,107	189,747	154,103	156,865	173,861	219,676	299,175	155,291	190,884	242,012
Interest and dividends	69,502	65,377	65,856	60,936	58,175	41,171	47,849	40,911	37,591	
Loans for current expenses	2,922,928	2,595,501	2,662,120	2,619,547	2,022,373	1,795,762	1,739,618	1,682,395	1,407,460	1,789,250
Money borrowed on { Schools	23,780	76,374	33,763	57,456	58,658	8,000	34,093	60,400	62,236	69,700
debentures for { Other purposes	1,441,543	1,492,519	1,214,617	1,232,855	1,346,890	937,057	798,131	747,861	771,320	679,314
Premium on debentures sold	6,007	8,161	12,150	11,444	47,598	26,226	31,748	39,933	31,784	73,522
County grants	3,923	3,935	3,553	966	2,099	2,425	2,022	6,307	7,289	
Miscellaneous	188,858	121,126	78,252	80,970	65,789	68,512	68,546	37,683	53,872	
Totals	8,821,379	7,995,428	7,482,143	7,231,301	6,603,300	5,782,916	5,677,826	5,311,936	5,020,372	5,231,355
DISBURSEMENTS.										
Expenses of municipal government:										
Allowances, salaries, commissions	148,625	146,164	137,263	125,105	125,711	120,053	122,203	120,538	121,207	119,792
Street lighting, water supply, fire protection	670,750	572,018	490,121	468,837	424,988	356,813	328,954	316,256	315,437	298,594
Law costs, including salaries	31,371	30,383	33,648	38,321	33,926	38,670	25,119	22,142	40,561	108,788
Other expenses of government	110,476	98,912	103,078	96,121	98,151	86,945	87,663	79,622	81,338	
Construction works:										
Streets, bridges and parks	761,621	575,049	568,269	677,624	552,482	379,064	325,302	351,668	304,857	333,226
Buildings and other works	199,077	155,996	103,369	31,576	45,540	60,335	73,335	65,524	45,262	292,537
Waterworks and electric light plant	930,894	849,628	666,148	659,007	544,162	416,581	421,279	384,868	316,920	
Support of the poor and other charities	35,316	36,494	38,310	42,348	34,325	35,636	35,371	31,234	33,908	30,664
Administra'n of justice, police service	104,136	92,260	84,960	82,483	78,243	81,321	79,423	75,784	67,279	66,251
County treasurer for levy	105,544	93,794	91,089	91,554	88,208	90,010	90,909	97,181	93,719	89,660
Payments for schools and education	819,181	758,177	736,451	702,112	702,885	643,876	643,347	667,449	633,938	656,246
Sinking Funds investments and deposits	220,417	218,117	173,693	135,448	173,850	140,806	259,056	160,452	145,393	246,378
Other investments and special deposits	327,789	117,299	174,942	192,703	129,388	116,251	61,315	91,986	82,345	

Debentures redeemed { School	57,305	39,233	34,186	47,518	46,249	45,959	58,527	71,378	44,082 }	358,691
{ All other	393,529	309,792	359,957	367,426	543,988	408,119	515,822	229,187	314,543 }	
Interest on loans and debentures	713,204	620,175	587,659	546,531	479,282	580,747	480,879	486,894	502,885	456,964
Money borrowed for current expenses	2,546,613	2,640,250	2,533,113	2,279,029	1,967,073	1,756,682	1,634,743	1,664,174	1,481,901	1,810,483
Board of Health	47,821	48,311	37,064	29,300	16,932	12,799	13,905	10,626	12,863 }	197,299
Miscellaneous	367,177	376,971	280,463	297,733	220,041	187,023	220,970	127,018	137,376 }	
Totals	8,590,846	7,779,023	7,233,783	6,910,776	6,305,424	5,557,690	5,478,122	5,053,981	4,775,814	5,065,573
ASSETS.										
Cash in treasury	230,533	216,405	248,360	320,525	297,876	225,226	199,704	257,955	244,558	165,782
Taxes in arrears	730,842	711,014	705,273	683,365	734,213	833,921	882,748	885,956	864,006	856,825
Sinking Fund investments and deposits	* 1,070,426	1,059,812	924,752	795,255	707,923	801,859	806,668	793,170	693,494 }	1,266,082
Other investments and special deposits	* 1,075,139	818,268	799,274	739,368	680,501	619,971	586,228	618,862	625,479 }	
Waterworks and electric light plant	*a* 6,438,765	5,468,961	4,942,029	4,403,418	3,877,317	3,504,764	3,159,171	2,890,983	2,644,937 }	5,092,767
Other buildings and property	3,372,507	3,273,421	3,098,453	3,003,493	2,905,089	3,087,487	2,983,178	2,950,183	2,986,528 }	
Miscellaneous	2,312,476	2,085,958	2,011,489	1,884,386	1,530,727	1,195,370	1,237,538	1,127,298	458,153	573,210
Totals	15,230,688	13,633,839	12,729,630	11,829,810	10,733,646	10,268,598	9,855,235	9,524,407	8,517,155	7,954,666
LIABILITIES.										
County levy	37,886	36,148	35,292	37,959	37,391	32 249	33,571	34,242	40,176	36,742
Local school rates	235,008	225,410	195,834	196,068	172,296	197,723	187,261	193,869	185,911	176,931
Debentures outstanding for { Aid to railways	597,971	516,260	503,868	528,270	497,997	507,484	603,594	607,105	652,143	722,628
{ Schools	* 858,024	881,990	844,849	845,272	831,404	857,365	895,224	1,023,429	1,034,407	1,025,020
{ Other purposes	* 13,437,231	12,365,128	11,194,793	10,316,994	9,485,768	8,979,801	8,351,797	7,967,529	7,403,818	6,863,404
Due Sinking Funds	*b* 78,788	121,745	99,855	96,028	83,619	85,152	94,551	120,617	87,791 }	735,877
Loans for current exp'nses and int'r'st	* 1,547,000	1,157,229	1,222,710	1,100,261	769,625	709,040	661,542	575,526	572,187 }	
Miscellaneous	208,962	195,167	202,681	199,474	174,551	144,203	267,460	213,585	142,672	170,903
Totals	17,000,870	15,499,077	14,299,882	13,320,326	12,052,651	11,513,017	11,095,000	10,735,902	10,119,105	9,731,505

* The increases in these items not otherwise accounted for, are due to the former villages of Alexandria and East Toronto having become incorporated as towns in 1903; the balances pertaining to their respective accounts are included in these items.

a. The electric and other light plants in *towns* in 1903 aggregated $1,662,671, as follows: Alexandria, $12,500; Almonte, $30,500; Amherstburg, $3,500; Aylmer, $22,840; Barrie, $42,262; Berlin, $130,166; Bothwell, $6,200; Bracebridge, $50,280; Brockville, $137,838; Collingwood, $47,376; Dresden, $12,000; East Toronto, $12,970; Fort Francis, $350; Fort William, $39,000; Goderich, $28,667; Gravenhurst, $22,000; Hespeler, $14,550; Huntsville, $19,000; Kincardine, $13,652; Kingsville (natural gas), $18,000; Leamington (natural gas), $15,000; Midland, $28,884; Mitchell, $9,000; Mount Forest, $13,000; Newmarket, $23,500; Niagara, $17,500; Niagara Falls, $71,850; North Toronto, $10,000; Orillia, $223,319; Owen Sound, $74,870; Paris, $29,801; Parry Sound, $32,418; Picton, $21,000; Port Arthur, $184,163; (including Electric Railway and Telephone plant); Prescott, $17,899; Preston, $600; Rat Portage, $65,223, (including Telephone plant; St. Mary's, $18,000; Strathroy, $14,838; Sudbury, $23,495; Thessalon, $10,160; Thorold, $25,000; Toronto Junction, $24,500; Trenton, $15,000; Wingham, $30,000.

b. Including Bracebridge, $100; Cobourg, $800; East Toronto, $3,456; Fort William, $11,187; Owen Sound, $11,750; Parkhill, $611; Port Arthur, $39,435; Rat Portage, $1,588; Tillsonburg, $2,385; Uxbridge, $1,297; Walkerton, $2,614.

POPULATION, ASSESSMENT AND TAXATION.

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head.	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Adelaide	1,865	1,920	800	1,512,045	1,512,225	15,501	11,022	8 31	10.3
Adjala	1,825	1,795	846	847,340	849,090	10,394	8,156	5 70	12.3
Admaston	2,183	2,177	590	744,025	743,675	6,335	6,471	2 90	8.5
Adolphustown	522	525	204	334,282	346,501	3,068	3,039	5 88	9.1
Albemarle	1,391	1,361	506	352,750	182,750	4,912	4,685	3 53	13.9
Alberton	169	181	156	100,590	72,021	1,745	1,164	10 33	17.3
Albion	2,680	2,700	800	1,120,000	1,127,500	12,123	13,302	4 52	10.8
Aldborough	4,564	*4,564	1,723	1,708,315	1,712,125	33,951	30,252	7 44	19.8
Alfred	3,214	3,241	589	341,300	334,325	9,314	9,186	2 90	27.3
Algona, S	939	874	183	35,580	37,070	1,398	1,518	1 49	39.3
Alice and Fraser	2,027	1,988	345	119,668	118,700	4,557	3,823	2 25	38.1
Alnwick	937	937	254	355,950	352,695	3,546	3,633	3 78	10.0
Amabel	3,410	3,387	983	647,650	640,300	10,755	10,858	3 15	16.6
Amaranth	2,441	2,397	803	1,173,780	1,155,565	12,677	13,761	5 20	10.8
Ameliasburg	2,921	2,921	966	1,213,853	1,123,570	11,918	11,053	4 08	9.8
Amherst Island	757	809	54	351,150	351,040	3,744	3,701	4 95	10.6
Ancaster	3,527	3,571	1,216	2,222,592	2,214,568	19,920	19,672	5 65	9.0
Anderdon	1,909	1,922	586	631,735	624,870	10,970	9,894	5 75	17.4
Anson and Hindon	256	275	92	34,605	34,975	1,024	938	4 00	29.6
Armour	898	948	332	198,784	193,666	2,278	2,400	2 54	11.5
Arran	2,252	2,248	832	1,471,090	1,465,375	11,689	11,120	5 19	7.9
Artemesia	3,182	3,276	1,160	1,056 190	1,047,075	15,897	15,528	5 00	15.1
Arthur	2,662	2,703	870	1,653,600	1,651,500	13,841	12,880	5 20	8.4
Ashfield	2,911	3,045	1,084	1,685,000	1,679,700	15,412	14,481	5 29	9.1
Asphodel	1,698	1,782	709	844,375	844,435	9,062	9,969	5 34	10.7
Assiginack	1,087	1,140	265	157,556	155,606	3,313	2,932	3 05	21.0
Athol	990	1,040	480	470,100	468,050	4,753	3,852	4 80	10.1
Atwood	80	750	59	44,775	191,490	1,209	5,274	15 11	27.0
Augusta	3,677	3,686	1,653	1,293,000	1,286,500	16,021	15,919	4 36	12.4
Bagot and Blithefield	1,434	1,492	338	144,347	142,819	3,624	3,658	2 53	25.1
Balfour	714	819	217	98,262	91,591	2,991	2,912	4 19	30.4
Bangor, W. and McC	971	917	273	60,180	62,930	2,571	2,363	2 65	42.7
Barrie	509	580	167	41,483	42,585	1,558	1,550	3 06	37.6
Barton	3,592	3,696	1,122	1,165,363	1,156,720	12,877	12,064	3 58	11.0
Bastard and Burgess, S	2,634	2,556	633	740,430	707,000	12,944	11,946	4 91	17.5
Bathurst	2,208	2,393	717	771,075	800,720	8,547	8,410	3 87	11.1
Bayham	3,427	3,537	1,496	1,084,405	1,080,245	21,693	22,797	6 33	20.0
Beckwith	1,610	1,557	590	503,775	503,250	6,675	6,692	4 15	13.2
Bedford	1,263	1,390	358	176,707	175,799	6,435	5,839	5 10	36.4
Belmont and Methuen	1,895	2,038	672	248,491	251,766	6,923	6,728	3 65	27.9
Bentinck	3,115	3,121	891	1,069,630	1,064,240	11,802	11,334	3 79	11.0
Bertie	3,202	2,802	1,460	1,696,170	1,688,345	19,368	16,508	6 05	11.4
Beverly	3,725	3,767	1,344	2,770,615	2,776,665	18,907	18,318	5 08	6.8
Bexley	858	854	301	155,085	128,225	3,965	3,658	4 62	25.6
Biddulph	2,135	2,202	662	1,238,970	1,229,020	11,886	11,727	5 57	9.6
Billings	432	389	147	71,036	72,231	1,500	1,340	3 47	21.1
Binbrook	1,157	1,184	438	992,080	994,780	8,090	7,298	7 00	8.2
Blandford	1,571	1,580	592	1,099,560	1,096,360	8,765	8,443	5 58	7.9
Blanshard	2,370	2,357	1,252	2,480,850	2,509,200	17,726	15,700	7 48	7.1
Blenheim	4,094	4,168	1,410	2,305,035	2,302,150	26,762	21,660	6 54	11.6
Blind River	1,077	1,196	269	256,560	183,007	5,353	4,703	4 97	20.9
Bonfield	1,384	1,591	317	148,452	166,753	3,634	3,927	2 63	24.5

* Figures for 1904 used as the return for 1903 is not yet in.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of ratepayers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head.	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Bosanquet	2,550	2,648	1,006	2,227,023	2,295,875	19,300	15,903	7 57	8.7
Brant	3,507	3,895	1,119	2,019,705	2,073,405	17,018	16,232	4 85	8.4
Brantford	4,575	4,817	1,859	3,861,350	3,839,241	25,827	25,934	5 65	6.7
Brighton	2,293	2,582	1,096	1,189,570	1,182,610	9,507	9,442	4 15	8.0
Brock	3,718	3,520	822	2,090,968	2,097,668	16,609	16,731	4 47	7.9
Bromley	1,959	1,839	416	180,683	167,261	6,084	5,104	3 11	33.7
Brooke	2,955	2,925	1,167	2,244,440	2,251,940	34,232	31,333	11 58	15.3
Brougham	575	517	225	32,450	32,105	837	974	1 46	25.8
Bruce	2,764	2,728	959	1,396,595	1,393,520	13,630	14,279	4 93	9.8
Brudenell & Lynedoch	1,262	1,374	331	63,575	67,623	2,956	2,843	2 34	46.5
Bucke	377	405	430	110,590	81,410	2,609	1,612	6 92	23.6
Brunel	785	765	283	100,835	98,370	2,039	2,274	2 60	20.2
Burford	4,012	4,069	1,670	2,196,965	2,186,880	20,961	20,434	5 22	9.5
Burgess, N	791	749	217	188,010	187,585	2,880	2,794	3 64	15.3
Burleigh & Anstruther	684	756	226	105,895	105,290	2,731	2,688	3 99	25.8
Burpee	300	286	95	25,690	25,350	804	767	2 68	31.3
Caistor	1,598	1,607	584	667,085	666,595	6,970	6,420	4 36	10.4
Caldwell	1,045	1,050	244	136,446	128,823	2,495	1,936	2 39	18.3
Caledon	3,785	3,854	1,579	1,786,180	1,770,510	17,915	16,390	4 73	10.0
Caledonia	1,787	1,735	584	288,440	285,969	8,103	7,865	4 53	28.1
Calvin	520	510	149	64,390	62,974	1,475	1,123	2 84	22.9
Cambridge	3,252	3,387	985	444,190	448,989	12,541	12,883	3 86	28.2
Camden	2,336	2,526	914	1,054,180	1,057,580	17,362	16,566	7 43	16.5
Camden East	4,224	4,641	1,530	1,739,245	1,779,290	21,170	22,479	5 01	12.2
Cameron	220	235	53	32,320	30,040	398	465	1 81	12.3
Canborough	909	885	389	361,313	360,700	4,809	5,028	5 29	13.3
Caradoc	3,528	3,501	1,274	1,216,475	1,212,900	23,206	20,641	6 58	19.1
Carden	694	719	277	124,400	63,270	2,663	2,805	3 84	21.4
Cardiff	643	644	192	43,432	39,974	1,754	2,162	2 73	40.4
Cardwell	434	429	171	84,000	81,470	1,432	1,265	3 30	17.0
Carling	331	336	139	42,224	41,229	1,482	1,635	4 48	35.1
Carlow	718	676	197	54,780	53,220	2,389	2,314	3 33	43.6
Carnarvon	702	685	241	111,435	102,770	2,980	1,748	4 25	26.7
Carrick	4,649	4,588	1,185	2,110,311	2,094,934	15,392	15,570	3 31	7.3
Cartwright	1,727	1,682	636	720,968	722,100	8,124	7,951	4 70	11.3
Cavan	2,417	2,435	1,008	1,555,875	1,555,800	14,742	14,641	6 10	9.5
Cayuga, N	1,520	1,498	550	741,185	740,150	7,425	6,392	4 88	10.0
Cayuga, S	745	758	215	393,600	393,100	3,094	3,036	4 15	7.9
Chaffey	977	1,033	408	158,703	156,886	2,549	2,792	2 61	16.1
Chandos	739	629	308	59,367	64,193	2,801	2,301	3 79	47.2
Chapleau	843	675	154	121,960	116,475	1,976	2,327	2 34	16.2
Chapman	659	662	216	149,890	150,254	2,590	1,943	3 93	17.3
Chapple	538	407	224	108,746	114,358	2,498	2,416	4 64	23.0
Charlottenburg	4,826	5,004	1,322	1,180,510	1,181,130	22,846	21,371	4 73	19.4
Charlotteville	2,943	3,107	1,280	923,591	926,586	13,311	12,382	4 52	14.4
Chatham	4,744	5,167	1,995	2,051,510	2,011,963	49,259	44,653	10 38	24.0
Chinguacousy	3,680	3,635	1,308	2,927,855	2,922,955	21,535	19,748	5 85	7.4
Christie	458	424	164	83,379	82,574	1,683	1,798	3 67	20.2
Clarence	4,883	4,909	1,163	397,954	390,123	17,162	16,196	3 51	43.1
Clarendon and Miller	820	820	272	63,070	75,436	2,069	1,979	2 52	32.8
Clarke	3,528	3,310	748	1,748,715	1,758,700	16,413	15 939	4 65	9.4
Clinton	1,811	1,817	708	1,068,960	1,057,876	12,415	11,838	6 86	11.6
Cockburn Island	300	314	109	75,173	60,248	1,283	1,118	4 28	17.1
Colborne	1,679	1,689	471	1,084,100	1,083,200	8,876	9,243	5 29	8.2
Colchester, N	1,880	1,848	513	692,300	917,394	15,608	15,706	8 30	22.5

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head.	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Colchester, S	2,740	2,708	848	1,019,905	1,011,420	19,493	16,093	7 11	19.1
Collingwood	3,197	3,422	1,205	1,405,855	1,381,956	17,019	16,140	5 32	12.1
Cornwall	5,769	5,730	1,378	1,174,765	1,167,113	20,213	18,114	3 50	17.2
Cramahe	2,194	2,270	1,080	1,077,195	1,080,945	10,528	10,115	4 80	9.8
Crosby, N	1,044	1,753	405	273,130	372,055	5,470	7,968	5 24	20.0
Crosby, S	1,387	1,479	633	408,696	394,226	6,733	6,588	4 85	16.5
Crowland	974	948	455	397,490	391,745	5,180	5,324	5 32	13.0
Culross	2,422	2,530	533	1,745,150	1,742,550	11,177	11,273	4 61	6.4
Cumberland	3,886	3,828	848	438,246	436,531	16,775	18,085	4 32	38.3
Dalhousie & Sh., N	1,612	1,680	555	251,866	251,633	5,526	5,015	3 42	21.9
Dalton	527	505	175	35,497	36,350	1,704	1,539	3 23	48.0
Darling	655	717	199	62,002	62,659	1,764	2,002	2 69	28.5
Darlington	3,737	3,332	1,107	2,368,618	2,415,050	19,748	17,977	5 28	8.3
Dawn	3,391	3,415	1,128	1,352,135	1,354,015	26,428	18,908	7 79	19.5
Day & Bright, Add'n'l	300	†	107	33,942		509		1 70	15.0
Delaware	1,389	1,435	549	592,300	591,275	9,457	8,391	6 81	16.0
Denbigh, Ab. & Ash	996	1,036	275	53,006	54,011	1,892	1,997	1 90	35.7
Derby	1,726	1,730	666	797,100	795,350	10,239	10,777	5 93	12.8
Dereham	3,550	3,435	1,156	2,462,115	2,435,530	27,517	27,043	7 75	11.2
Dorchester, N	3,413	3,281	1,173	1,734,915	1,723,087	21,323	18,655	6 25	12.3
Dorchester, S	1,551	1,529	582	1,068,680	1,067,015	13,336	11,284	8 60	12.5
Douro	2,100	2,050	592	761,316	765,177	7,635	8,411	3 64	10.0
Dover	4,245	4,127	1,125	1,822,094	1,806,107	26,901	29,275	6 34	14.8
Downie	2,649	2,635	997	2,074,650	2,073,300	19,166	19,450	7 24	9.2
Draper	1,031	995	243	94,225	93,706	2,456	2,658	2 38	26.1
Drummond	1,890	1,850	668	699,209	711,464	8,959	8,773	4 74	12.8
Drury, D. and G.	595	755	298	193,706	219,266	3,518	3,915	5 91	18.2
Dumfries, N	1,873	1,945	640	1,868,560	1,869,095	10,681	10,175	5 70	5.7
Dumfries, S	2,450	2,341	987	2,298,508	2,278,190	15,800	15,869	6 45	6.9
Dummer	1,673	1,774	732	621,130	617,575	6,748	6,547	4 03	10.9
Dungannon	823	752	279	54,240	52,818	2,235	2,133	2 72	41.2
Dunn	789	812	214	403,350	402,990	3,884	3,518	4 92	9.6
Dunwich	3,214	3,121	1,256	1,776,435	1,758,640	22,690	26,917	7 06	12.8
Dymond	254	226	150	84,170	83,000	2,756	2,064	10 85	32.7
Dysart, etc	978	977	339	159,300	138,938	4,683	4,947	4 79	29.4
Easthope, N	2,108	2,133	577	1,944,220	1,940,550	12,512	16,671	5 94	6.4
Easthope, S	1,933	1,836	501	1,192,417	1,189,061	10,200	10,141	5 28	8.5
Eastnor	1,616	1,681	313	397,000	369,960	9,456	8,169	5 85	23.8
Edwardsburg	3,407	3,445	1,399	1,173,110	1,164,630	13,099	13,706	3 84	11.2
Egremont	3,123	3,030	784	1,540,775	1,547,900	11,847	12,720	3 79	7.7
Ekfrid	2,456	2,543	947	1,989,485	1,984,395	19,626	18,573	7 99	9.9
Elderslie	1,945	2,130	702	1,301,210	1,297,320	11,623	11,118	5 98	8.9
Eldon	2,755	2,849	923	779,062	782,490	12,438	13,234	4 51	16.0
Elizabethtown	3,828	3,818	1,690	1,397,350	1,393,175	18,876	21,119	4 93	13.5
Ellice	2,746	2,841	920	1,683,986	1,648,587	21,799	21,870	7 94	12.9
Elma	3,699	3,741	983	3,366,700	3,315,800	25,867	23,592	6 99	7.7
Elmsley, N	875	921	387	380,135	388,740	4,295	4,019	4 91	11.3
Elmsley, S	701	718	337	452,500	451,675	3,886	3,922	5 54	8.6
Elzevir and Grims'pe	*1,288	1,288	*407	96,212	98,000	4,257	3,554	3 31	44.2
Emily	2,017	2,014	801	950,677	947,705	11,728	11,914	5 81	12.3
Emo	700	711	329	207,550	171,901	3,856	3,838	5 51	18.6
Enniskillen	4,015	4,290	1,603	2,283,100	2,268,620	35,835	32,705	8 93	15.7
Ennismore	747	794	152	355,610	358,000	3,531	3,402	4 73	9.9

† Organized 1904. * Taken from 1903 return, 1904 not yet received.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head.	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Eramosa	2,417	2,617	774	1,863,625	1,848,005	12,784	12,136	5 29	6.9
Erin	3,027	3,317	1,118	2,039,175	2,022,575	14,914	14,162	4 93	7.3
Ernestown	2,739	2,684	1,120	1,476,260	1,473,255	16,055	14,117	5 86	10.9
Esquesing	3,282	3,415	997	2,245,689	2,269,557	15,672	15,455	4 78	7.0
Essa	4,004	4,064	1,162	1,311,419	1,300,949	16,498	13,988	4 12	12.6
Etobicoke	3,998	3,723	1,790	1,870,873	1,864,157	23,586	22,609	5 90	12.6
Euphemia	1,985	2,035	712	984,175	986,100	13,105	10,152	6 60	13.3
Euphrasia	2,860	3,174	1,070	1,270,805	1,271,885	13,484	14,365	4 71	10.6
Evanturel	151	†	126	90,965	.....	518	.....	3 43	5.7
Faraday	1,179	1,075	588	156,277	154,028	4,413	4,473	3 74	28.2
Fenelon	2,225	2,192	629	755,950	754,535	9,599	8,873	4 31	12.7
Ferris	815	830	242	76,173	74,915	2,412	2,833	2 96	31.7
Finch	3,687	3,627	1,222	677,925	675,825	20,985	14,248	5 69	31.0
Fitzroy	2,456	2,383	838	728,583	725,858	11,049	11,120	4 50	15.2
Flamboro, E	2,318	2,420	720	1,501,392	1,277,185	13,560	12,239	5 85	9.0
Flamboro, W	2,602	2,648	1,017	1,278,200	1,515,022	13,982	12,197	5 34	10.9
Flos	3,504	3,399	1,246	990,834	990,769	18,902	17,648	5 39	19.1
Foley	512	455	221	88,061	86,282	1,354	1,343	2 64	15.4
Fredericksburg, N	1,415	1,425	554	716,725	718,115	6,747	6,581	4 77	9.4
Fredericksburg, S	902	893	337	576,840	574,225	5,719	5,607	6 34	9.9
Fullarton	2,116	2,131	751	1,913,200	1,909,500	14,298	14,415	6 76	7.5
Gainsborough	2,072	2,044	925	1,058,848	1,053,343	9,626	9,247	4 65	9.1
Galway & Cavendish	1,034	1,040	317	56,980	58,630	1,487	1,473	1 44	26.1
Garafraxa, E	1,838	1,655	652	1,115,700	1,118,950	9,196	9,652	5 00	8.2
Garafraxa, W	2,102	2,143	806	1,683,960	1,684,560	15,563	12,786	7 40	9.2
Georgina	1,607	1,632	642	652,405	648,750	5,463	5,906	3 40	8.4
Glamorgan	472	463	131	26,406	36,557	1,355	1,520	2 87	51.3
Glanford	1,466	1,458	507	1,065,455	1,061,885	7,586	6,974	5 17	7.1
Glenelg	2,551	2,546	955	664,542	668,515	8,883	8,866	3 48	13.4
Gloucester	6,103	6,447	2,244	1,437,434	1,418,925	26,848	27,218	4 40	18.7
Goderich	2,250	2,300	489	1,472,235	1,477,500	12,016	10,423	5 34	8.2
Gordon	610	544	279	113,385	112,755	1,997	1,775	3 27	17.6
Gosfield, N	1,997	1,997	669	723,728	720,316	15,893	15,141	7 96	22.0
Gosfield, S	2,219	2,293	693	1,024,040	1,015,040	17,049	16,395	7 68	16.6
Goulbourn	2,397	2,572	613	839,700	839,525	11,780	12,553	4 91	14.0
Gower, N	1,850	1,896	685	924,525	912,035	9,987	9,617	5 40	10.8
Gower, S	752	811	304	313,365	313,640	3,756	3,043	4 99	12.0
Grantham	1,917	1,863	751	1,292,850	1,284,000	9,007	8,900	4 70	7.0
Grattan	1,808	1,828	530	199,735	200,465	3,574	3,556	1 98	17.9
Greenock	2,735	2,631	908	1,859,010	1,848,220	12,860	13,540	4 70	6.9
Grey	3,184	3,201	1,061	1,795,825	1,788,900	23,121	15,657	7 26	12.9
Griffith and Mat	617	785	137	22,380	21,400	1,196	1,220	1 94	53.4
Grimsby, N	1,254	1,133	665	848,238	845,463	8,522	7,762	6 80	10.0
Grimsby, S	1,274	1,295	508	622,351	616,983	7,822	8,144	6 14	12.6
Guelph	2,203	2,208	715	1,530,300	1,524,150	11,861	10,747	5 38	7.8
Gwillimbury, E	3,318	3,308	1,591	1,272,715	1,271,710	13,451	13,334	4 05	10.6
Gwillimbury, N	1,478	1,558	685	787,550	779,550	5,621	5,789	3 80	7.1
Gwillimbury, W	2,188	2,179	815	1,055,869	1,050,814	11,282	10,366	5 11	10.7
Hagarty, Jones, etc	2,884	2,939	574	96,163	97,390	6,780	4,920	2 35	70.5
Hagerman	466	474	147	51,467	50,447	1,462	1,462	3 14	28.4
Hanmer	482	†	120	39,737	.....	1,100	.....	2 28	27.7
Harley	237	†	133	88,130	.....	1,431	.....	6 04	16.2
Haldimand	3,668	3,623	1,497	1,539,495	1,567,860	15,926	15,658	4 34	10.3

† Organized 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purpose.			
						Total.		Per head.	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904	1904.
				$	$	$	$	$ c.	
Hallam	529	530	230	103,645	100,610	2,560	2,155	4 84	24.7
Hallowell	2,713	2,802	1,014	1,265,780	1,136,630	11,677	11,491	4 30	9.2
Hamilton	3,624	3,631	1,315	1,939,615	1,938,215	16,439	16,829	4 54	8.5
Harvey	1,045	972	400	198,626	188,420	4,634	4,246	4 43	23.3
Harwich	4,706	4,812	2,053	3,801,031	3,733,661	32,176	28,302	6 84	8.5
Hawkesbury, E.	4,306	4,192	1,106	449,310	449,515	12,727	13,464	2 96	28.3
Hawkesbury, W.	1,448	1,315	545	264,798	265,622	6,850	7,540	4 73	25.9
Hay	3,435	3,395	960	1,852,485	1,833,060	17,629	17,758	5 13	9.5
Head, Clara and M.	386	364	94	34,750	36,310	921	1,170	2 39	26.5
Hibbert	2,089	2,013	523	1,614,610	1,609,100	13,514	12,816	6 47	8.4
Hillier	1,369	1,397	559	738,790	738,950	7,396	7,031	5 40	10.0
Hilton	417	391	207	86,674	66,275	1,645	1,885	3 94	19.0
Himsworth, N.	579	640	189	78,018	77,636	1,877	1,812	3 24	24.1
Himsworth, S.	1,389	1,545	461	326,915	331,006	5,013	4,295	3 61	15.3
Hinchinbrooke	1,178	1,274	374	191,525	192,440	5,482	5,051	4 65	28.6
Holland	2,438	3,120	971	810,080	843,705	10,496	11,509	4 31	13.0
Hope	2,887	3,147	1,296	2,201,030	2,201,500	12,742	12,237	4 41	5.8
Horton	1,360	1,425	284	495,906	496,856	3,848	3,777	2 83	7.8
Houghton	1,886	1,860	646	463,560	463,460	8,067	7,965	4 28	17.4
Howard	3,000	2,956	1,117	2,442,479	2,447,094	24,525	21,170	8 18	10.0
Howe Island	331	411	70	52,812	52,812	1,619	1,524	4 89	30.7
Howick	3,671	3,677	1,159	2,163,311	2,153,312	19,976	17,400	5 44	9.2
Howland, B. and S.	1,047	1,025	314	197,332	195,110	3,003	2,760	2 87	15.2
Hudson	155	†	116	38,609	.....	1,078	.....	6 95	27.9
Hullett	2,678	2,721	943	1,904,850	1,908,420	16,442	15,754	6 14	8.6
Humberstone	2,664	2,565	1,093	931,175	921,000	9,950	10,374	3 73	10.7
Humphrey	601	570	232	140,562	136,472	2,748	2,413	4 57	19.6
Hungerford	3,464	3,582	1,365	780,669	770,165	13,531	12,603	3 91	17.3
Huntingdon	2,309	2,176	540	440,838	435,819	9,286	8,029	4 02	21.1
Huntley	2,108	2,125	522	456,655	458,165	10,097	10,009	4 79	22.1
Huron	3,048	3,124	1,076	1,512,080	1,508,425	16,366	16,737	5 37	10.8
Innisfil	3,463	3,122	1,298	1,404,904	1,405,379	19,398	18,006	5 60	13.8
Jocelyn	439	428	190	64,693	62,043	1,692	1,686	3 85	26.2
Johnson, Tarbutt, etc.	952	977	298	168,500	156,165	3,816	4,191	4 01	22.6
Joly	258	287	123	44,965	44,770	778	682	3 02	17.3
Kaladar and Ang.	1,286	1,294	344	72,665	72,316	2,647	3,044	2 06	36.4
Keewatin	984	983	374	288,510	278,940	7,957	7,294	8 09	27.6
Kennebec	1,160	1,146	292	93,372	92,462	3,167	3,142	2 73	33.9
Kenyon	3,920	4,163	874	749,650	745,025	15,562	14,233	3 97	20.8
Keppel	3,555	3,474	1,185	740,268	745,180	13,329	13,167	3 75	18.0
Kerns	327	†	204	124,330	.....	2,187	.....	6 69	17.6
Kincardine	2,646	2,704	922	1,582,250	1,583,750	14,868	12,615	5 62	9.4
King	4,679	4,798	1,904	2,791,555	2,806,205	24,453	23,947	5 23	8.8
Kingston	2,641	2,569	1,049	1,088,760	1,093,625	16,798	15,472	6 36	15.4
Kinloss	2,065	2,139	634	1,224,765	1,225,085	8,887	8,721	4 30	7.3
Kitley	1,863	1,877	717	1,020,523	1,020,945	9,300	10,013	4 99	9.1
Korah	566	†	377	435,215	.....	6,471	.....	11.43	14.9
Laird	556	404	134	95,920	93,751	1,894	1,656	3 41	19.7
Lanark	1,668	1,723	473	454,995	455,200	6,036	6,186	3 62	13.3
Lancaster	3,743	3,716	1,065	938,807	935,817	13,770	13,923	3 68	14.7
Lavallee	684	†	318	223,223	.....	3,283	.....	4 80	14.7
Lavant	515	526	139	56,342	53,547	2,052	1,831	3 98	36.4
Laxton, Digby and L.	726	730	197	72,500	66,665	3,023	3,732	4 16	41.7

† Organized 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Leeds & Lansdowne F	2,627	2,709	1,288	1,066,640	1,062,845	16,405	15,114	6 24	15.4
Leeds & Lansdowne R	2,113	2,212	729	580,556	579,205	11,320	10,196	5 36	19.5
Limerick	517	510	123	59,415	60,330	1,658	1,603	3 21	27.9
Lindsay	730	821	289	79,185	79,185	3,250	3,279	4 45	41.0
Lobo	2,539	2,527	1,076	1,756,580	1,754,805	17,190	16,300	6 77	9.8
Lochiel	4,563	4,640	820	1,010,850	1,010,220	15,130	14,366	3 32	15.0
Logan	2,593	2,777	581	1,968,365	1,957,350	19,960	19,144	7 70	10.1
London	7,874	7,582	2,843	4,205,611	4,199,375	40,132	36,722	5 10	9.5
Longueuil	957	936	239	166,375	168,625	2,832	2,654	2 96	17.0
Loughborough	1,733	1,719	741	411,030	402,420	8,225	7,965	4 75	20.0
Louth	1,649	1,643	651	753,480	748,975	9,993	9,716	6 06	13.2
Luther E	1,693	1,686	464	1,169,325	1,176,250	9,621	9,838	5 68	8.2
Luther W	1,967	2,014	512	896,450	890,000	13,215	10,552	6 72	14.9
Lutterworth	453	422	161	37,554	36,488	1,442	1,141	3 18	38.4
McDougall	513	465	200	70,435	70,412	1,834	1,938	3 58	26.0
McGillivary	2,730	2,754	705	2,053,570	2,031,155	19,321	16,273	7 08	9.4
McIrvine	39	52	21	25,440	24,625	649	646	16 07	25.5
McKellar	573	581	182	74,130	74,395	2,009	1,952	3 51	27.1
McKillop	2,470	2,497	811	2,015,600	2,012,000	17,204	14,680	6 97	8.5
McKim	289	314	289	115,180	113,229	3,436	3,115	11 09	29.8
McLean and Ridout	760	740	343	131,517	110,651	2,290	2,232	3 01	17.4
McMurrich	614	644	325	131,520	120,791	1,908	1,938	3 11	14.5
McNab	3,417	3,407	1,001	1,157,032	1,141,351	11,289	9,648	3 30	9.8
Macaulay	617	657	285	102,306	100,525	2,576	2,830	4 18	25.2
Macdonald and M., etc.	800	725	251	81,455	78,607	3,184	2,230	3 98	39.1
Machar	751	758	393	109,558	100,404	3,543	2,896	4 72	32.3
Madoc	3,357	3,310	655	491,000	490,000	13,129	12,136	3 91	26.7
Maidstone	2,793	2,966	990	1,328,025	1,018,899	20,582	19,519	7 37	15.5
Malahide	3,535	3,490	1,395	1,929,895	1,927,065	24,323	22,481	6 88	12.6
Malden	1,401	1,355	333	720,380	718,444	8,144	10,037	5 81	11.3
Manvers	2,512	2,808	1,050	889,665	883,005	12,314	12,554	4 90	13.8
Mara	3,010	3,013	988	962,110	959,736	12,233	11,778	4 06	12.7
March	1,083	1,073	362	368,720	368,502	4,710	4,567	4 35	12.8
Mariposa	3,792	3,824	1,701	2,591,730	2,594,400	23,300	21,528	6 14	9.0
Markham	4,911	4,992	2,053	3,222,740	3,225,280	28,246	25,284	5 75	8.8
Marlborough	1,389	1,456	512	494,395	495,480	6,596	6,357	4 75	13.3
Marmora and Lake	1,565	1,581	462	245,812	249,800	6,130	6,555	3 92	24.9
Maryborough	2,812	2,900	967	2,330,580	1,753,355	18,898	18,253	6 72	8.1
Marysburg N	976	1,084	493	479,150	479,675	5,408	4,287	5 54	11.3
Marysburg S	1,213	1,315	475	348,965	348,890	5,967	5,981	4 92	17.1
Matchedash	488	473	159	59,102	58,875	1,140	1,211	2 34	19.3
Matilda	3,338	3,533	1,312	1,317,200	1,319,600	18,528	19,422	5 55	14.0
Mattawan	275	243	81	23,855	24,105	476	413	1 73	20.0
Mayo	487	526	119	25,990	26,405	1,701	1,645	3 50	65.4
Medonte	3,838	3,823	1,159	1,337,331	1,566,909	16,001	12,764	4 17	12.0
Medora and Wood	963	994	662	408,243	383,208	7,533	7,356	7 82	18.5
Melancthon	3,295	3,400	1,007	1,774,216	1,778,259	14,698	14,518	4 46	8.3
Mersea	3,988	4,061	1,254	1,846,282	1,833,297	32,206	30,864	8 08	17.4
Metcalfe	1,472	1,484	361	1,004,875	1,003,460	17,363	13,416	11 08	17.3
Middleton	2,448	2,382	898	762,323	759,008	10,894	10,508	4 45	14.3
Minden	1,170	1,156	342	88,761	89,296	3,284	3,479	2 81	37.0
Minto	2,793	2,881	1,004	1,857,635	1,851,695	15,904	15,111	5 69	8.6
Monaghan N.	891	885	260	599,000	597,600	4,920	4,660	5 52	8.2

† Organized 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Monaghan S.	903	872	263	681,860	681,710	3,937	4,024	4 36	5.8
Monck	1,097	1,075	427	286,608	271,243	4,459	4,296	4 06	15.6
Monmouth	511	533	168	55,457	56,687	2,496	2,359	4 88	45.0
Mono	2,714	2,776	804	1,535,100	1,526,525	12,757	14,217	4 70	8.3
Montague	1,889	1,907	736	583,186	582,603	8,808	8,396	4 66	15.1
Monteagle and H.	1,686	1,806	464	73,010	72,059	3,773	3,878	2 24	51.7
Moore	4,330	4,292	1,572	3,035,665	3,106,173	27,944	22,924	6 45	9.2
Morley	272	†	129	116,130		2,172		7 99	18.7
Mornington	,965	2,700	925	2,353,400	2,439,280	22,641	20,236	7 64	9.6
Morris	2,304	2,368	638	1,926,020	1,824,516	11,017	10,955	4 78	5.7
Morrison	836	786	247	82,499	81,813	1,871	1,936	2 24	22.7
Mosa	2,015	2,397	813	582,460	583,395	14,824	14,313	7 36	25.5
Moulton	1,714	1,794	463	609,255	604,505	5,942	6,443	3 47	9.8
Mountain	2,916	2,871	1,024	1,322,460	1,333,345	18,435	17,583	6 32	13.9
Mulmur	2,589	2,719	1,069	1,472,275	1,337,875	13,581	12,382	5 25	9.2
Murray	2,662	2,585	1,100	1,165,975	1,167,825	12,090	10,133	4 54	10.4
Muskoka	718	748	309	105,565	101,655	2,577	2,628	3 59	24.4
Nairn and Lorne	279	241	108	57,447	49,161	1,388	1,773	4 97	24.2
Nassagaweya	2,073	2,277	616	1,047,275	1,012,325	7,695	7,317	3 71	7.3
Neebing	342	327	493	116,205	233,492	2,324	5,128	6 80	20.0
Nelson	2,585	2,589	846	1,782,175	1,786,780	13,599	13,398	5 26	7.6
Nepean	4,990	4,989	1,534	2,512,389	2,455,516	25,570	21,976	5 12	10.2
Niagara	1,704	1,707	787	924,160	909,700	10,409	11,053	6 11	11.3
Nichol	1,606	1,689	425	1,323,695	1,323,590	8,115	7,302	5 05	6.1
Nipissing	704	557	182	108,992	104,861	1,980	2,240	2 81	18.2
Nissouri E	2,502	2,326	919	2,281,960	2,204,354	14,498	14,636	5 79	6.4
Nissouri W	2,583	2,720	641	1,473,920	1,471,950	20,642	18,307	7 99	14.0
Normanby	4,351	4,326	1,020	1,736,876	1,743,730	15,944	15,142	3 66	9.2
Norwich N	2,212	2,212	776	1,530,315	1,520,770	15,271	13,939	6 90	10.0
Norwich S	2,130	2,472	901	993,720	988,746	11,772	11,524	5 53	11.8
Nottawasaga	4,610	5,015	1,700	2,536,549	2,519,158	22,868	21,641	4 96	9.0
Oakland	708	683	299	398,305	396,465	3,678	3,545	5 19	9.2
Oakley	300	295	136	39,230	37,795	1,314	1,610	4 38	33.5
Olden	1,063	1,059	311	105,658	105,228	4,328	4,141	4 07	41.0
Oliver	427	489	212	118,375	109,358	4,147	3,910	9 71	35.3
Oneida	1,349	1,301	503	955,305	955,635	7,637	6,972	5 66	8.0
Onondaga	1,003	1,036	377	703,918	706,240	6,449	6,198	6 43	9.2
Ops	2,194	2,262	796	1,568,910	1,568,600	15,755	14,202	7 18	10.0
Orford	2,689	2,625	1,027	1,420,600	1,422,125	19,424	16,985	7 22	13.7
Orillia	3,670	3,733	1,346	596,314	567,479	14,940	13,720	4 07	25.1
Oro	3,766	3,805	1,114	1,087,310	1,076,635	13,830	13,527	3 67	12.7
Osgoode	4,124	4,470	1,483	1,517,375	1,501,330	22,647	19,906	5 49	14.9
Osnabruck	4,696	4,817	1,447	1,173,461	1,177,500	21,708	18,873	4 62	18.5
Oso	1,142	1,138	407	93,789	94,465	3,394	3,486	2 97	36.2
Osprey	2,900	3,069	942	1,055,555	829,725	11,718	10,174	4 04	11.1
Otonabee	3,024	3,130	1,040	1,970,079	1,970,429	16,742	16,839	5 54	8.5
Oxford-on-Rideau	2,527	2,553	1,196	802,165	798,095	11,179	10,867	4 42	13.9
Oxford E	2,000	2,004	756	1,498,090	1,494,590	11,977	12,152	5 99	8.0
Oxford N	1,180	1,227	432	886,715	881,240	7,772	6,969	6 59	8.8
Oxford W	1,972	2,013	672	1,119,735	1,115,385	11,530	10,944	5 85	10.3
Paipoonge	292	†	264	124,750		4,798		16 43	38.5

† Organized 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxe imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Pakenham	1,969	1,962	411	622,132	629,576	9,107	8,908	4 63	14.6
Palmerston and C.	950	1,048	279	58,645	58,576	2,741	2,370	2 89	46.7
Papineau	826	677	175	51,051	52,755	1,106	1,200	1 34	21.7
Peel	3,763	3,800	1,140	2,244,370	2,244,625	27,577	19,667	7 33	12.3
Pelee Island	685	644	180	288,210	287,460	9,678	12,877	14 13	33.6
Pelham	2,402	2,516	867	1,047,740	1,001,545	11,581	10,879	4 82	11.1
Pembrooke	842	825	300	177,587	179,042	2,014	1,902	2 39	11.3
Percy	2,670	2,718	1,032	966,502	968,185	11,807	13,518	4 42	12.2
Perry	1,402	1,213	458	236,281	237,229	3,798	3,834	2 71	16.1
Petewawa	1,074	1,050	243	45,797	45,194	1,460	1,503	1 36	31.9
Pickering	4,996	5,155	1,975	3,294,093	3,332,605	29,681	28,210	5 94	9.0
Pilkington	1,249	1,288	525	1,154,940	1,045,862	8,729	7,761	6 99	7.6
Pittsburg	2,120	2,193	754	810,007	810,362	16,087	13,975	7 59	19.9
Plantagenet N.	3,800	3,475	967	402,015	404,690	13,177	11,051	3 47	32.8
Plantagenet S.	3,252	3,355	691	392,245	391,575	10,360	10,092	3 19	26.4
Plummer Additional	260	257	110	75,385	66,872	1,681	1,269	6 47	22.3
Plympton	3,359	3,351	1,251	2,052,700	2,052,920	25,643	22,376	7 63	12.5
Portland	2,097	2,202	756	457,132	452,650	10,986	10,175	5 24	24.0
Prince	225	252	144	66,665	71,038	1,195	1,434	5 31	17.9
Proton	3,124	2,987	923	978,940	934,650	13,989	13,508	4 48	14.3
Puslinch	2,831	2,869	1,001	1,460,315	1,459,040	13,472	12,723	4 76	9.2
Radcliffe	359	312	118	32,720	31,905	1,032	989	2 87	31.5
Raglan	763	738	196	54,850	52,405	2,052	1,722	2 69	37.4
Rainham	1,655	1,743	528	535,955	536,805	7,151	6,399	4 32	13.3
Raleigh	4,450	4,470	1,499	2,565,815	2,552,770	38,384	38,416	8 63	15.0
Rama	1,247	1,308	380	195,610	204,705	4,095	4,291	3 28	20.9
Ramsay	2,083	2,034	735	680,915	680,505	11,716	11,439	5 62	17.2
Ratter and Dunnett	980	960	276	54,195	50,935	2,809	2,731	2 87	51.8
Rawdon	3,021	3,206	900	1,167,071	1,169,058	14,970	13,580	4 96	12.8
Rayside	741	712	192	72,788	71,515	3,174	2,022	4 28	43.7
Reach	3,315	3,287	1,055	1,979,196	1,983,328	17,970	17,988	5 42	9.1
Richmond	2,287	2,309	1,004	858,785	857,710	10,966	10,785	4 79	12.8
Rochester	2,400	2,482	741	972,950	971,960	16,200	14,943	6 75	16.7
Rolph, Buch. and W.	995	992	247	57,848	55,777	2,649	2,531	2 66	45.8
Romney	1,845	1,796	531	788,615	778,325	17,213	16,479	9 33	21.8
Ross	1,919	1,961	462	564,815	555,765	6,890	6,278	3 59	12.2
Roxborough	4,058	4,258	1,078	792,470	787,910	22,183	20,909	5 47	28.0
Russell	2,921	2,914	811	707,738	678,335	16,620	14,487	5 69	23.5
Ryde	602	574	201	54,690	51,064	1,657	1,241	2 75	30.3
Ryerson	745	801	267	183,461	174,085	2,236	2,022	3 00	12.2
St. Edmunds	461	454	239	48,750	53,380	1,875	2,565	4 07	38.5
S. Joseph	1,157	1,065	390	165,325	142,282	3,762	3,183	3 25	22.8
St. Vincent	2,777	2,679	1,354	1,385,884	1,405,851	15,566	15,897	5 61	11.2
Salter, May and 116	717	884	224	81,950	135,933	2,682	2,611	3 74	32.7
Saltfleet	3,186	3,319	1,306	1,817,139	1,809,943	19,714	17,440	6 19	10.8
Sandfield	246	256	94	32,931	32,571	916	1,061	3 72	27.8
Sandwich E	2,740	2,539	915	*628,860	628,860	*13,261	13,261	4 84	21.1
Sandwich, S.	1,551	1,558	528	561,751	570,136	11,693	9,517	7 54	20.8
Sandwich, W.	2,430	2,490	650	724,874	715,874	10,843	11,240	4 46	15.0
Sarawak	1,437	1,358	733	318,015	308,940	6,436	6,179	4 46	20.2
Sarnia	2,042	1,970	842	1,206,408	1,220,525	18,359	14,353	8 99	15.2

* Figures for 1903 used as those for 1904 have not yet been received.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values		Taxes imposed for all purposes.			
						Total.		Per head.	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Saugeen	1,440	1,429	489	840,820	840,720	7,679	7,077	5 33	9.1
Sault Ste. Marie	*	2,319	*	*	2,178,120	*	32,672		
Scarborough	3,569	3,522	1,705	2,086,135	2,086,240	17,816	18,374	4 99	8.5
Schreiber	530	458	160	112,225	129,510	2,335	2,283	4 41	20.8
Scott	2,061	2,099	739	1,023,745	1,024,820	10,735	9,883	5 21	10.5
Scugog	481	472	142	281,785	281,475	2,762	2,159	5 74	9.8
Sebastopol	649	657	150	51,335	51,705	1,417	1,143	2 18	27.6
Seneca	1,588	1,702	661	877,768	878,705	9,513	8,855	5 99	10.8
Seymour	2,846	2,875	1,046	1,118,115	1,118,885	14,877	15,081	5 23	13.3
Sheffield	1,994	1,948	671	681,857	679,479	7,936	7,563	3 98	11.6
Sherbourne, McC., etc	204	276	100	25,228	21,128	1,133	975	5 55	44.9
Sherbrooke	349	362	90	150,513	150,412	1,310	1,233	3 75	8.7
Sherbrooke, S.	807	789	283	89,451	90,627	2,066	2,129	2 56	23.1
Shuniah	244	229	202	165,438	162,309	3,422	2,840	14 02	20.7
Sidney	3,843	3,483	1,511	2,065,790	2,056,980	20,577	19,236	5 35	10.0
Smith	2,685	2,657	1,178	1,481,240	1,477,210	13,037	12,918	4 86	8.8
Snowdon	691	695	259	68,245	69,293	2,666	2,665	3 86	39.1
Sombra	3,853	3,440	1,408	1,705,110	1,848,450	31,720	24,322	8 23	18.6
Somerville	1,814	1,831	455	205,550	205,840	7,066	7,070	3 90	34.4
Sophiasburg	1,662	1,746	466	988,550	978,675	8,894	8,018	5 35	9.0
Southwold	3,424	3,513	1,089	2,512,576	2,434,320	23,761	24,047	6 94	9.5
Springer	1,041	981	332	78,333	62,332	2,718	2,756	2 61	34.7
Stafford	1,093	1,077	207	233,090	233,425	3,604	2,893	3 30	15.5
Stamford	1,941	1,713	795	1,452,760	1,083,130	16,979	11,970	8 75	11.7
Stanhope	457	458	133	24,972	24,941	1,217	1,125	2 66	48.7
Stanley	2,033	2,014	695	1,666,255	1,669,100	13,176	11,648	6 48	7.9
Stephen	3,918	3,996	1,258	1,813,485	1,808,320	16,825	15,171	4 29	9.3
Stephenson	1,127	1,151	305	156,412	149,533	3,533	3,745	3 13	22.6
Stisted	590	597	282	113,611	116,820	2,425	2,342	4 11	21.3
Storrington	1,766	1,750	717	420,840	421,242	9,376	8,852	5 31	22.3
Strong	814	843	289	145,250	135,370	2,347	2,395	2 88	16.2
Sullivan	2,993	3,235	900	1,149,575	1,177,675	12,503	13,714	4 18	10.9
Sunnidale	2,211	2,072	707	857,663	849,076	9,649	8,929	4 36	11.3
Sydenham	3,239	3,447	1,054	1,321,557	1,320,750	15,593	15,714	4 81	11.8
Tarentorus	337	386	379	324,993	356,124	5,395	5,896	16 01	16.6
Tay	5,331	4,891	1,479	795,010	769,889	15,539	13,401	2 91	19.5
Tecumseth	3,010	3,015	1,023	1,671,620	1,674,460	20,920	19,813	6 95	12.5
Tehkummah	435	382	157	57,155	54,975	1,957	1,564	4 50	34.2
Thessalon	603	514	205	81,771	60,723	2,352	1,872	3 90	28.8
Thorah	1,204	1,243	491	566,075	562 550	7,521	8,209	6 25	13.3
Thorold	1,536	1,726	890	631,004	633,748	7,744	7,606	5 04	12.3
Thurlow	3,540	3,912	1,691	1,976,500	1,976,100	19,855	17,706	5 61	10.1
Tilbury, E	3,182	3,227	1,110	1,638,100	1,631,775	35,424	35,460	11 13	21.6
Tilbury, N	1,977	1,941	610	652,350	647,935	14,631	11,734	7 40	22.4
Tilbury, W	1,807	2,139	602	678,273	675,168	15,910	17,457	8 80	23.5
Tiny	4,009	4,044	1,119	965,469	964,753	13,471	12,944	3 36	14.0
Torbolton	949	884	243	137,975	138,690	3,358	2,938	3 54	24.3
Toronto	4,928	4,895	1,670	2,733,946	2,726,820	23,204	21,707	4 71	8.5
Toronto Gore	820	900	326	702,540	733,245	5,782	5,815	7 05	8.2
Tossorontio	1,602	1,362	526	745,985	740,654	7,497	6,894	4 68	10.0

*Sault Ste. Marie municipality dissolved at end of 1903, as Korah township, and Steelton town were then organized.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Townships.	Assessed population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Townsend	3,711	3,747	1,441	2,425,225	2,388,900	17,485	15 521	4 71	7.2
Trafalgar	3,301	3,266	1,200	2,483,639	2,479,424	16,873	18,679	5 11	6.8
Tuckersmith	2,170	2,348	599	1,970,085	1,965,410	12,135	11.809	5 59	6.2
Tudor and Cashel	867	896	286	67,051	66,871	2,696	2,506	3 11	40.2
Turnberry	1,986	2,036	618	1,305,110	1,316,635	9,085	7,582	4 57	7.0
Tyendinaga	3,546	3,533	1,059	1,402,678	1,402,578	16,946	17,041	4 78	12.1
Usborne	2,151	2,191	468	1,824,350	1,822,850	16,187	12,596	7 53	8.9
Uxbridge	2,525	2,512	985	992,540	993,975	11,173	10,934	4 43	11.3
Van Horne	199	255	165	63,981	53,005	946	962	4 75	14.8
Vaughan	4,186	4,183	1,341	2,922,960	2,921,370	24,354	24,780	5 82	8.3
Verulam	1,825	1,840	697	525,069	520,725	9,886	9,745	5 42	18.8
Vespra	2,607	2,693	898	957,855	964,000	11,863	11,929	4 55	12.4
Wainfleet	2,784	2,701	879	936,220	948,787	12,027	11,625	4 32	12.8
Wallace	2,676	2,693	852	1,947,961	1,948,561	13,889	12,289	5 19	7.1
Walpole	3,772	3,770	1,374	1,945,230	1,945,870	25,636	21,346	6 80	13.2
Walsingham N	1,992	2,021	754	546,785	543,800	10,133	8,513	5 09	18.5
Walsingham S	1,864	1,685	732	699,855	686,275	12,380	10,711	6 64	17.7
Warwick	2,800	2,897	1,072	2,291,300	2,288,800	19,837	17,101	7 08	8.7
Waterloo	6,544	6,545	1,350	3,638,545	3,634,820	29,787	29,037	4 55	8.2
Waters	116	116	60	28,165	22.921	710	601	6 12	25.2
Watt	923	923	336	138,010	137,860	3,457	3,243	3 75	25.0
Wawanosh E	1,792	1,859	502	1,455,700	1,451,800	8,268	7,767	4 61	5.7
Wawanosh W	1,983	1,999	487	1,314,800	1,311,975	9,053	8,951	4 57	6.9
Wellesley	4,646	4,629	1,080	2,808,775	2,802,400	24,394	21,840	5 25	8.7
Westmeath	3,043	3,224	885	294,340	295,817	12,015	11,048	3 95	40.8
Westminster	4,208	4,441	625	3,040,490	3,023,850	26,898	26,296	6 39	8.8
Whitby E	2,583	2,956	878	1,626,150	1,625,625	12,997	12,064	5 03	8.0
Whitby	1,735	1,820	736	1,476,270	1,479,175	12,389	13,346	7 14	8.4
Whitchurch	3,226	3,078	1,221	1,621,935	1,614,735	12,434	14,864	3 85	7.7
Widdifield	1,027	914	432	114,975	86,845	3,384	2,950	3 30	29.4
Wilberforce & Alg. N.	2,373	2,412	515	267,845	269,410	4,772	4,728	2 01	17.8
Williams E	1,278	1,293	352	1,233,620	1,232,670	11,231	11,528	8 79	9.1
Williams W	1,384	1,463	460	889,730	889,080	9,848	8,871	7 12	11.1
Williamsburg	3,636	3,814	1,160	1,474,135	1,472,310	19,181	18,787	5 28	13.0
Willoughby	870	870	350	423,950	417,390	4,955	5,362	5 70	11.7
Wilmot	4,770	4,860	1,203	2,600,730	2,602,725	23,014	22,957	4 82	8.8
Winchester	3,370	3,332	674	1,408,275	1,398,650	27,944	28,224	8 29	19.8
Windham	3,365	3,340	1,245	1,570,535	1,567,575	15,710	14,136	4 67	10.0
Wolfe Island	1,398	1,360	394	585,620	586,158	10,988	8,996	7 86	18.8
Wolford	1,521	1,559	635	927,614	922,894	7,311	7,056	4 81	7.9
Wollaston	779	763	228	60,905	60,645	2,493	2,182	3 20	40.9
Woodhouse	2,031	2,141	787	1,124,604	1,118,539	9,836	9,777	4 84	8.7
Woolwich	4,120	4,137	1,202	2,605,420	2,573,185	22,785	22,545	5 53	8.7
Yarmouth	4,569	4,515	1,405	2,665,927	2,674,422	34,811	27,736	7 62	13.1
Yonge and Escott F.	2,283	2,411	946	713,436	712,950	14,500	15,628	6 35	20 3
Yonge and Escott R.	1,242	1,141	492	396,230	396,005	7,604	6,314	6 12	19.2
York	11,791	10,422	4,155	6,115,736	6,004,529	88,134	81,312	7 48	14.4
Zone	1,068	1,198	493	703,861	614,570	8,360	6,687	7 83	11.9
Zorra E	3,604	3,980	1,210	2,740,915	2,759,165	26,421	26,993	7 33	9.6
Zorra W	2,404	2,422	1,015	2,578,700	2,563,075	18,563	17,011	7 72	7.2

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Villages.	Assessed Population.		No. of rate-payers	Assessed values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Acton	1,489	1,401	461	318,230	318,450	6,459	6,351	4 34	20.3
Ailsa Craig	669	693	294	137,755	137,380	3,243	3,099	4 85	23.5
Alvinston	786	805	284	212,505	205,032	5,114	4,667	6 51	24.1
Arkona	483	492	131	111,170	111,525	1,610	1,364	3 33	14.5
Arthur	1,233	1,279	545	323,720	322,280	7,773	7,494	6 30	24.4
Ashburnham	x.....	1,781	x.....	x.....	463,574	x.....	8,609	.....	.....
Athens	892	912	306	180,750	178,625	4,251	4,103	4 77	23.5
Ayr	847	840	326	279,709	278,609	4,824	4,800	5 70	17.2
Bath	368	384	159	115,355	116,445	1,845	2,324	5 01	16.0
Bayfield	519	533	174	88,542	87,879	1,498	1,334	2 89	16.9
Beamsville	810	774	296	211,795	211,680	4,347	4,251	5 37	20.5
Beaverton	805	738	285	165,250	163,520	3,965	2,806	4 93	24.0
Beeton	716	647	214	163,230	165,430	4,705	4,100	6 57	28.8
Belle River	544	548	167	65,972	62,084	1,805	1,825	3 32	27.4
Blyth	880	865	234	229,860	230,375	5,395	4,904	6 13	23.5
Bobcaygeon	911	887	317	167,240	157,195	3,891	4,074	4 27	23.3
Bolton	588	642	254	154,075	157,375	2,810	2,560	4 78	18.2
Bradford	955	955	297	257,760	256,190	5,413	5,380	5 67	21.0
Bridgeburg	1,393	1,284	376	495,125	485,252	12,450	10,761	8 94	25.1
Brighton	1,367	1,301	545	496,694	468,094	7,188	6,941	5 26	14.5
Brussels	1,224	1,210	431	323,535	321,660	8,176	7,937	6 68	25.3
Burk's Falls	780	863	320	200,108	169,303	5,372	4,050	6 89	26.8
Burlington	*1,232	1,232	*458	371,320	368,190	5,178	5,659	4 20	13.9
Caledonia	800	800	423	171,534	170,819	5,298	4,413	6 62	30.8
Campbellford	2,492	2,366	802	742,590	735,522	14,820	14,693	5 95	20.0
Cannington	944	1,038	387	286,340	281,155	4,292	4,219	4 55	15.0
Cardinal	1,250	1,273	356	375,960	375,255	4,994	4,760	4 00	13.3
Casselman	417	675	166	58,740	65,250	1,770	2,161	4 24	30.1
Cayuga	885	933	251	184,330	178,460	4,815	3,650	5 44	26.1
Chatsworth	385	†.....	120	85,800	.....	1,459	.....	3 79	17.0
Chesley	1,770	1,781	480	411,445	397,325	11,157	10,315	6 30	27.1
Chesterville	871	894	218	160,125	162,590	4,094	3,410	4 70	25.6
Chippawa	710	532	207	127,210	121,990	2,074	1,747	2 92	16.3
Clifford	572	591	199	131,245	129,585	1,997	1,781	3 49	15.2
Cobden	780	708	205	137,050	98,475	2,994	2,355	3 84	21.8
Colborne	993	991	387	294,650	291,100	5,913	5,240	5 95	20.1
Creemore	669	583	231	137,350	135,400	3,577	2,675	5 35	26.0
Delhi	781	790	314	182,800	172,925	3,323	3,164	4 25	18.2
Drayton	804	790	327	179,070	170,505	4,362	4,218	5 43	24.4
Dundalk	810	800	250	180,700	162,050	4,023	3,992	4 97	22.3
Dutton	873	834	326	262,390	249,965	4,783	5,311	5 48	18.2
Eganville	1,047	1,093	215	298,550	289,000	5,497	4,806	5 25	18.4
Elmira	1,372	1,182	291	384,355	343,575	5,492	4,699	4 00	14.3
Elora	1,225	1,180	413	302,430	300,245	7,515	7,522	6 13	24.8
Embro	588	581	232	199,516	198,688	3,771	3,074	6 41	18.9
Erin	501	517	193	117,400	112,275	1,538	1,640	3 07	13.1
Exeter	1,617	1,704	679	526,685	523,010	11,987	8,895	7 41	22.8
Fenelon Falls	1,185	1,160	405	314,368	309,185	5,464	4,946	4 61	17.4
Fergus	1,543	1,480	535	451,515	446,195	10,530	9,268	6 82	23.3
Fort Erie	973	866	415	285,069	288,167	5,905	4,511	6 07	20.7
Garden Island	227	237	77	50,600	50,600	1,645	1,645	7 25	32.5
Georgetown	1,307	1,327	440	374,460	373,780	7,786	7,664	5 96	20.8
Glencoe	850	888	415	306,958	312,985	6,113	6,161	7 19	19.9

* Figures of 1903 used, as those taken in 1904 have not been received. † Incorporated 1904.
x United to Peterboro town in 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Villages.	Assessed Population.		No. of rate-payers	Assessed Values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Grand Valley	802	806	270	195,050	186,600	3,548	3,392	4 42	18.2
Grimsby	899	935	344	240,400	231,810	6,247	5,564	6 95	26.0
Hagersville	937	951	346	219,000	215,650	4,462	4,390	4 76	20.4
Hanover	1,929	1,467	551	359,925	266,325	9,272	6,989	4 81	25.8
Hastings	795	752	297	175,915	175,120	3,130	3,133	3 94	17.8
Havelock	1,032	987	277	157,038	144,715	3,974	3,296	3 85	25.3
Hensall	793	723	314	235,275	229,125	3,174	3,334	4 00	13.5
Hintonburg	2,784	2,800	708	471,704	465,654	14,538	13,962	5 22	30.8
Holland Landing	402	447	150	70,605	69,905	940	955	2 34	13.3
Iroquois	1,023	983	349	332,050	329,500	8,338	6,934	8 15	25.1
Kemptville	1,218	1,320	476	396,805	391,955	8,641	8,400	7 09	21.8
Lakefield	1,258	1,173	443	403,450	373,500	5,933	6,278	4 72	14.7
Lanark	845	863	230	170,405	172,605	4,334	4,348	5 13	25.4
Lancaster	525	538	165	77,695	76,660	1,676	1,623	3 19	21.6
L'Original	1,305	1,183	371	154,325	148,125	2,610	2,507	2 00	16.9
Lucan	805	816	275	204,755	199,055	4,595	4,898	5 71	22.4
Lucknow	1,012	960	330	283,160	278,617	6,803	6,400	6 72	24.0
Madoc	1,088	1,117	335	362,918	316,608	7,258	6,965	6 67	20.0
Markdale	962	924	269	215,800	206,265	4,546	3,786	4 73	21.1
Markham	1,064	948	389	273,975	273,990	7,447	6,877	7 00	27.2
Marmora	802	960	244	144,390	138,515	3,243	2,682	4 04	22.5
Maxville	835	756	277	71,540	68,985	2,315	1,715	2 77	32.4
Merrickville	948	921	352	315,135	312,330	6,224	6,184	6 57	19.8
Merritton	1,619	1,677	446	714,369	688,205	15,646	15,383	9 66	21.9
Millbrook	866	873	299	189,495	188,345	4,253	3,624	4 91	22.4
Milverton	736	702	233	260,975	255,255	3,673	2,914	4 99	14.1
Morrisburg	1,518	1,528	513	536,300	539,950	11,944	11,944	7 87	22.3
Newboro	429	445	151	88,940	86,940	1,796	1,749	4 19	20.2
Newburg	504	559	222	130,495	111,785	2,887	2,818	5 73	22.1
Newbury	356	358	134	61,685	63,095	1,378	1,026	3 87	22.3
Newcastle	*559	559	*281	*187,710	187,710	*3,777	3,777	6 76	20.1
New Hamburg	1,281	1,265	360	392,075	385,840	7,905	7,830	6 17	20.2
†Niagara Falls South		1,777			444,168		7,898		
Norwich	1,248	1,246	507	323,310	324,370	8,886	9,219	7 12	27.5
Norwood	881	861	346	231,010	231,130	5,498	5,083	6 24	23.8
Oil Springs	849	841	271	328,165	331,609	6,586	5,356	7 76	20.1
Omemee	625	615	320	114,207	111,526	2,613	2,525	4 18	22.9
Ottawa East	1,413	1,492	438	351,585	318,010	6,939	5,314	4 91	19.7
Paisley	939	997	338	330,995	321,035	5,870	5,637	6 25	17.7
Point Edward	976	890	338	280,085	286,780	4,108	3,868	4 20	14.7
Port Carling	287	314	170	75,290	69,170	1,818	1,575	6 33	24.1
Port Colborne	1,227	1,247	500	376,316	368,488	6,642	5,586	5 41	17.7
Port Dalhousie	1,058	974	333	343,905	288,845	5,662	5,615	5 35	16.5
Port Dover	1,053	1,049	451	272,695	269,845	5,954	5,914	5 65	21.8
Port Elgin	1,325	1,302	550	314,320	289,625	6,819	6,952	5 15	21.7
Port Perry	1,330	1,257	538	428,515	396,605	10,835	10,646	8 15	25.3
Port Rowan	595	687	238	133,280	136,910	3,079	3,016	5 17	23.1
Port Stanley	554	523	275	157,725	150,160	3,189	2,834	5 76	20.2
Portsmouth	636	610	235	115,390	116,165	2,352	2,298	3 70	20.4
Richmond	432	446	138	71,160	70,305	1,638	1,493	3 79	23.0
Richmond Hill	641	585	254	159,550	157,700	2,536	2,594	3 96	15.9
Rockland	1,809	1,615	379	91,880	77,700	5,060	4,855	2 80	55.1
Shelburne	1,195	1,177	377	355,190	353,320	8,487	8,204	7 10	23.9
Southampton	1,887	1,842	597	357,657	339,842	8,587	8,601	4 55	24.0
Springfield	428	431	159	100,815	88,429	2,955	1,887	4 73	20.4

*Figures for 1903, as 1904 have not been received. †Merged into Niagara Falls City for 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Villages.	Assessed Population.		No. of rate-payers	Assessed Values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Stirling	789	817	304	198,310	184,933	4,615	4,748	5 85	23.3
Stouffville	1,175	1,145	487	347,025	346,625	5,546	5,567	4 72	16.0
Streetsville	454	491	230	153,045	155,540	2,322	2,355	5 11	15.2
Sturgeon Point	329	312	102	21,575	21,375	475	428	1 44	22.0
Sundridge	400	480	130	69,235	62,815	2,041	1,917	5 10	29.5
Sutton	612	583	342	151,020	144,625	2,102	1,624	3 43	13.9
Tara	626	651	209	207,585	211,055	3,137	3,425	5 01	15.1
Teeswater	878	958	294	255,350	248,100	4,688	4,571	5 34	18.4
Thamesville	798	812	227	249,725	226,425	5,964	5,821	7 47	23.9
Thedford	583	619	218	110,150	106,825	2,201	2,076	3 78	20.0
Tilbury	1,120	1,191	393	234,350	217,985	8,247	7,858	7 36	35.2
Tiverton	464	532	153	70,550	72,995	1,865	1,806	4 02	26.4
Tottenham	547	509	224	156,750	159,675	4,301	3,862	7 86	27.4
Tweed	1,337	1,275	483	285,710	275,780	5,610	5,720	4 20	19.6
Vienna	329	340	130	76,813	77,728	1,563	1,684	4 75	20.3
Wardsville	300	304	122	60,530	60,648	1,541	1,240	5 14	25.5
Waterdown	620	588	277	128,900	130,550	1,786	1,783	2 88	13.9
Waterford	1,087	1,151	435	272,200	262,275	6,847	6,591	6 30	25.2
Watford	1,301	1,285	450	332,965	329,045	8,286	6,804	6 37	24.9
Wellington	650	584	274	217,812	214,162	2,717	2,336	4 18	12.5
Weston	1,305	1,262	358	450,758	309,990	8,631	8,026	6 61	19.1
xWestport	721	.....	221	109,220	.....	3,234	.....	4 49	29.6
Winchester	1,226	1,183	349	266,700	262,875	5,892	6,822	4 81	22.1
Woodbridge	535	571	244	114,465	111,500	2,313	2,143	4 32	20.2
Woodville	493	511	130	89,050	87,675	2,000	1,600	4 06	22.5
Wroxeter	431	468	128	113,016	113,761	1,466	1,390	3 40	13.0
Wyoming	664	643	323	128,775	127,040	3,669	3,018	5 53	28.5
Towns.									
Alexandria	2,187	2,060	502	364,125	345,342	10,180	9,760	4 65	28.0
Alliston	1,306	1,256	427	333,426	327,805	8,780	9,093	6 72	26.3
Almonte	2,908	2,926	842	786,055	787,225	19,814	17,294	6 81	25.2
Amherstburg	2,187	2,176	1,158	488,115	481,860	15,303	15,324	7 00	31.4
Arnprior	3,689	3,703	1,023	1,027,175	755,922	23,753	25,102	6 44	23.1
Aurora	1,692	1,656	672	454,072	455,939	10,439	11,551	6 17	23.0
Aylmer	2,129	2,162	810	716,185	725,455	22,530	23,830	10 58	31.5
Barrie	6,468	6,113	1,764	1,630,105	1,627,705	40,411	40,505	6 25	24.8
Berlin	10,851	10,466	2,709	3,793,795	3,629,600	90,600	82,371	8 35	23.9
Blenheim	1,512	1,442	577	418,930	410,935	11,494	10,170	7 60	27.4
Bothwell	804	778	155	186,815	184,160	4,456	4,617	5 54	23.9
Bowmanville	2,834	2,794	1,009	1,095,145	1,109,430	30,069	30,507	10 61	27.5
Bracebridge	2,880	2,664	815	678,025	629,328	22,062	15,409	7 66	32.5
Brampton	2,955	2,842	929	995,805	975,255	22,942	21,997	7 76	23.0
Brockville	9,137	8,965	2,635	3,571,355	3,457,175	94,952	90,841	10 39	26.6
Bruce Mines	714	549	191	164,730	160,451	3,885	3,265	5 44	23.6
Cache Bay	634	547	138	95,640	96,185	2,152	1,595	3 39	22.5
Carleton Place	4,080	4,147	1,291	913,555	918,495	22,839	22,962	5 60	25.0
Clinton	2,270	2,271	846	632,897	623,722	15,895	15,703	7 00	25.1
Cobourg	4,249	4,148	1,856	1,551,720	1,550,880	46,335	39,395	10 90	29.9
Collingwood	6,840	7,200	2,135	2,038,166	1,952,957	53,788	50,667	7 86	26.4
Copper Cliff	2,217	2,155	381	295,435	247,130	9,160	8,157	4 13	31.0
Cornwall	5,849	5,998	1,520	1,814,775	1,936,500	47,065	46,810	8 05	25.9
Deseronto	3,481	3,539	834	812,700	803,897	22,755	22,509	6 53	28.0
Dresden	1,845	1,726	707	496,300	888,530	11,186	13,101	6 06	22.5
Dundas	3,384	3,312	1,120	1,066,245	1,035,310	25,180	29,305	7 44	23.6

x Incorporated 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Towns.	Assessed Population.		No. of rate-payers	Assessed Values.		Taxes imposed for all purposes.			
						Total.		Per head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Dunnville	2,204	2,215	804	750,610	696,460	16,409	15,104	7 45	21.9
Durham	1,756	1,714	504	646,433	622,036	9,349	8,934	5 32	14.5
East Toronto	3,141	2,579	830	891,095	823,045	21,416	24,013	6 82	24.0
Essex	1,435	1,459	523	391,681	402,954	13,813	11,566	9 63	35.3
Forest	1,617	1,542	643	427,726	352,119	9,463	9,762	5 85	22.1
Fort Frances	775	507	219	392,058	207,452	5,761	5,746	7 43	14.7
Fort William	6,491	5,718	1,370	2,119,924	1,900,317	59,358	56,393	9 14	28.0
Galt	8,463	8,125	2,319	3,031,220	2,969,750	68,048	68,461	8 04	22.4
Gananoque	3,829	3,702	1,567	1,216,368	1,176,108	27,711	23,755	7 24	22.8
Goderich	4,040	4,015	1,242	1,415,950	1,394,505	35,000	31,520	8 66	24.7
Gore Bay	721	697	236	133,295	135,895	3,357	3,398	4 66	25.2
Gravenhurst	2,244	2,151	392	378,717	393,685	13,349	13,906	5 95	35.2
*Haileybury									
Harriston	1,753	1,807	516	470,860	464,558	12,657	11,852	7 22	26.9
Hawkesbury	4,614	4,270	954	516,424	506,314	16,607	9,945	3 60	32.2
Hespeler	2,279	2,435	387	689,880	660,760	14,925	13,759	6 55	21.6
Huntsville	2,250	2,204	592	494,194	483,500	14,332	13,054	6 37	29.0
Ingersoll	4,627	4,857	1,697	1,475,790	1,444,860	39,350	38,778	8 50	26.7
Kincardine	2,448	2,403	651	628,443	634,333	14,045	14,642	5 74	22.3
Kingsville	1,618	1,663	532	372,071	372,684	10,982	10,958	6 79	29.5
Leamington	2,532	2,626	761	733,525	744,445	21,293	21,669	8 41	29.0
Lindsay	7,106	7,089	2,091	2,151,920	2,026,840	68,987	60,481	9 71	32.1
Listowel	2,427	2,698	802	831,280	822,260	23,324	22,861	9 61	28.1
Little Current	931	993	275	134,795	132,810	2,874	2,764	3 09	21.3
†Massey	472		99	75,485		2,484		5 29	32.9
Mattawa	1,412	1,607	313	272,993	279,312	8,223	7,079	5 82	30.1
Meaford	2,298	2,002	1,158	773,330	729,125	19,648	18,343	8 55	25.4
Midland	3,833	3,784	1,110	960,440	902,925	26,637	22,778	6 95	27.7
Milton	1,388	1,172	408	415,590	418,000	7,896	8,359	5 69	19.0
Mitchell	1,906	1,863	599	686,293	673,770	15,523	13,352	8 14	22.6
Mount Forest	2,240	2,276	689	712,600	690,230	17,102	19,853	7 63	24.0
Napanee	2,925	2,870	1,074	1,020,334	991,901	26,884	27,863	9 19	26.3
New Liskeard	854	772	378	273,320	201,696	6,894	4,077	8 07	25.2
Newmarket	2,415	2,400	878	555,125	533,070	13,216	13,056	5 47	23.8
Niagara	1,468	1,431	516	552,905	555,570	12,781	12,393	8 71	23.1
‡Niagara Falls		4,819			2,186,020		49,451		
North Bay	3,720	3,650	1,329	957,828	739,379	24,904	22,235	6 69	26.0
North Toronto	2,293	2,041	1,310	922,290	873,530	19,409	18,319	8 46	21.0
Oakville	1,740	1,720	682	463,380	456,555	13,066	9,198	7 51	28.2
Orangeville	2,422	2,567	1,108	788,245	770,725	21,378	20,931	8 83	27.1
Orillia	5,191	5,067	1,402	1,468,160	1,437,950	38,245	35,310	7 37	26.0
Oshawa	4,918	4,767	1,327	1,303,575	1,167,805	30,175	28,203	6 14	23.1
Owen Sound	9,716	9,479	4,725	3,240,413	3,215,054	89,257	85,974	9 19	27.5
Palmerston	1,856	1,808	497	456,590	467,305	11,936	12,542	6 43	26.1
Paris	3,507	3,464	1,330	1,113,772	1,105,012	24,536	21,375	7 00	22.0
Parkhill	1,377	1,374	603	376,846	370,842	8,341	8,630	6 06	22.1
Parry Sound	2,773	2,804	1,000	620,595	593,180	17,551	16,989	6 33	28.3
Pembroke	5,456	5,165	1,057	1,273,750	1,204,800	40,653	34,243	7 45	31.9
Penetanguishene	2,701	2,730	790	741,220	714,140	17,877	17,122	6 62	24.1
Perth	3,665	3,724	939	1,225,575	1,226,775	25,862	25,274	7 06	21.1
Peterborough	14,175	13,329	4,436	5,497,189	4,721,320	108,593	94,181	7 66	19.8
Petrolea	3,984	3,736	1,788	1,336,620	1,316,210	40,780	39,979	10 24	30.5
Picton	3,558	3,549	1,271	1,386,010	1,407,635	26,306	26,750	7 39	19.0

*Haileybury incorporated in August, 1904, but no assessment taken that year.
†Incorporated 1904.
‡Merged into Niagara Falls City for 1904.

POPULATION, ASSESSMENT AND TAXATION.—*Concluded.*

Towns.	Assessed Population.		No. of rate-payers	Assessed Values.		Taxes imposed for all purposes.			
						Total.		Per Head	Mills on $
	1904.	1903.	1904.	1904.	1903.	1904.	1903.	1904.	1904.
				$	$	$	$	$ c.	
Port Arthur....	6,178	4,487	1,251	2,329,044	1,845,273	49,932	43,602	8 08	21.4
Port Hope.	4,267	4.144	1,900	1,558,020	1,502,825	36,189	33,412	8 48	23.2
Prescott	2,899	2,971	921	944,310	929,160	22,889	23,444	7 90	24.2
Preston.....	2,502	2,408	433	806,430	751,080	16,465	14,471	6 58	20.4
Rainy River ...	514	‡.....	319	407,320	.....	10,885	.....	21 18	26.7
Rat Portage....	4,829	4,584	1,090	1,638,770	1,656,140	48,783	46,117	10 10	29.8
Renfrew.....	3,256	3.243	820	1,121,260	1,091,645	22,867	22,392	7 02	20.4
Ridgetown.....	2.320	2,270	664	691,105	679,727	17,465	17,406	7 53	25.3
St. Marys.....	3,456	3.447	1,111	1,419.020	1,303,650	30,075	28,891	8 70	21.2
Sandwich.....	1,989	1,636	588	631,026	610,225	12,874	11,944	6 47	20.4
Sarnia.....	9,023	8.848	2.432	3,097,703	3,020,605	88,748	71,959	9 84	28.6
Sault Ste. Marie	7,165	8,015	2,522	4,676,121	4,728,831	94,596	99,735	13 20	20.2
Seaforth.....	2.177	2.116	742	619,330	618,550	15,075	15,464	6 92	24.3
Simcoe	3,074	3,004	768	952,420	950.615	22,091	23,811	7 19	23.2
Smith's Falls ..	5,209	5,469	1,399	1,663,290	1,511,205	37,510	33,247	7 20	22.6
Stayner	1.149	1,144	460	223,850	221,145	5,893	5,596	5 13	26.3
Steelton	1,709	‡.....	862	865,675	.....	20,415	.....	11 95	23.6
Strathroy.....	3.073	2,936	910	970,626	943.459	23,890	20,983	7 77	24.6
Sturgeon Falls.	2,128	1,875	330	† 394,611	394.611	† 12,803	12,803	6 02	32.4
Sudbury.....	2.183	2,400	795	562,550	516,740	16,133	15,916	7 39	28.7
Thessalon.....	1,197	1,055	208	245.060	216,615	6,547	5,890	5 47	26.7
Thornbury	808	780	303	240,920	234,635	4,820	4,694	5 97	20.0
Thorold	2,097	2,050	794	651,648	600,835	17,110	16,873	8 16	26.3
Tillsonburg	2,250	2.245	765	771,650	784.195	21,438	19,821	9 53	27.8
Toronto Junct..	7,671	6,941	3,134	3,070,207	2,582,140	77,075	70,972	10 05	25.1
Trenton	3,805	3,907	2,102	1,239,966	1,207,410	28,530	27,229	7 50	23.0
Uxbridge.....	1,569	1,617	562	490,535	491,890	14,156	12,385	9 02	28.9
Vankleek Hill..	1,680	1,473	508	479,515	487,455	9,332	8,237	5 55	19.5
Walkerton.....	2,988	3,006	620	778,760	876,160	20,067	20,493	6 72	25.8
Walkerville....	2,286	1,948	525	2,439.007	2,304,990	36,144	32,068	15 81	14.8
Wallaceburg....	3,059	3,050	920	673,930	684,145	20,530	19,688	6 71	30.5
Waterloo	3,802	3,647	1,411	1,581,360	1,558,305	31,000	28,480	8 15	19.6
Welland.....	1.757	1,679	648	716,500	659,429	20,923	20,959	11 91	29.2
Whitby.....	2,334	2,211	814	812.407	870,880	22,593	17,878	9 68	27.8
Wiarton.....	2,620	2.450	625	757,012	647,350	19,365	16,338	7 39	25.6
Wingham.....	2,213	2,266	746	671,392	620,437	15,228	14,666	6 88	22.7
Cities.									
Belleville.....	8,387	9,000	3,500	3,751,217	3,895,000	90,942	90,303	10 84	24.2
Brantford.....	19,496	18,510	3,953	8,093,590	7,440,200	179,807	171,856	9 22	22.2
Chatham	9,587	9,222	3,263	3,835,559	3,765,789	128,398	113,162	13 39	33.5
Guelph.....	12,240	11,931	3,153	4,069,320	3,854,672	101,155	86,802	8 26	24.9
Hamilton.....	57,561	54,761	12,484	28,914,204	27,847,758	591,724	552,607	10 28	20.5
Kingston	18,444	18,246	4,972	7,865,075	7,783,123	155,301	164,214	8 42	19.8
London.....	41,742	40,104	12,196	18,598,846	18,168,588	462,499	450,613	11 08	24.9
Niagara Falls ..	7,062	.....	1,928	2,937,420	‖.....	75,556	‖.....	10 70	25.7
Ottawa	63,234	61,597	13,500	32,333,725	29,386,635	718,485	701,430	11 36	22.2
St. Catharines..	11,181	10,676	3,600	5,154,861	5,092,997	118,116	114,912	10 56	22.9
St. Thomas	12,037	11,845	4,152	4,809,985	5,154,988	136,587	136,032	11 35	28.4
Stratford.....	12,241	11,460	2 908	4,129,945	4,074,685	110,172	106,429	9 00	26.7
Toronto.....	226,365	219,002	70,739	144,109,234	140,893,969	3,248,452	3,132,597	14 35	22.5
Windsor.....	13,835	13.411	4,834	5,767,850	5,685,350	172,077	155,719	12 44	29.8
Woodstock.....	9,424	9,293	2,360	2,948,500	2.882,750	75,580	71,905	8 02	25.6

‡ Incorporated 1904. † Figures for 1903, as the return for 1904 has not been received.
‖ Included in Towns previous to 1904. (See town of Niagara Falls and village of Niagara Falls So.)

COMPARATIVE TABLES

SHOWING STATISTICS FOR MUNICIPALITES GROUPED INTO COUNTY LIMITS

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.	Borrowed on debentures for schools.
Algoma :	$	$	$	$	$	$	$	$	$
Townships	10,498	58,569	1,574	659	.....	47	669	20,553	1,450
Towns	1,639	78,027	3,354	2,572	3,247	6,100	.....	62,089	.....
Totals :									
1903	12,137	136,596	4,928	3,231	3,247	6,147	669	82,642	1,450
1902	16,509	112,651	6,315	3,968	2,774	4,136	50	78,126	15,487
Brant :									
Townships	14,403	71,336	227	24	.....	3,834	4,103	2,100	1,000
Town	1,265	22,171	555	736	8,763	345	.....	19,725	.....
City	347	169,773	4,939	5,111	38,111	11,467	32,178	9,100	.....
County	11,752	.....	105	279	.....	182	.....	.....	.....
Totals :									
1903	27,767	263,280	5,826	6,150	46,874	15,828	36,281	30,925	1,000
1902	18,554	253,593	5,515	5,972	44,160	16,150	63,761	28,714	.....
Bruce :									
Townships	16,896	172,667	1,697	224	.....	619	5,974	14,584	700
Villages	17,923	46,701	2,872	1,872	134	1,099	6,197	16,961	5,000
Towns	7,769	52,879	2,341	1,536	9,953	848	9,038	66,540	.....
County	7,050	.....	1,205	171	.....	61	8,000	15,000	.....
Totals :									
1903	49,638	272,247	8,115	3,803	10,087	2,627	29,209	113,085	5,700
1902	44,319	247,927	6,956	3,540	9,780	2,920	41,760	93,638	7,775
Carleton :									
Townships	12,731	124,689	1,406	534	.....	1,269	9,483	13,505	1,500
Villages	805	15,918	180	209	4,218	94	.....	6,206	.....
City	69,554	771,140	32,371	16,763	177,515	78,015	51,700	339,817	30,000
County	4,445	.....	280	423	.....	998	.....	33,771	.....
Totals :									
1903	87,535	911,747	34,237	17,929	181,733	80,376	61,183	393,299	31,500
1902	25,994	922,830	22,222	20,524	252,919	110,721	3,192	277,508	32,225
Dufferin :									
Townships	5,583	73,128	80	.....	.....	186	1,255	15,416	700
Villages	967	12,404	485	304	.....	33	.....	7,600	.....
Town	.....	23,115	900	179	2,155	562	3,424	11,011	.....
County	321	.....	422	129	.....	291	2,000	7,849	.....
Totals :									
1903	6,871	108,647	1,887	612	2,155	1,072	6,679	41,876	700
1902	5,799	100,085	1,727	951	2,094	1,412	6,299	51,891	.....
Elgin :									
Townships	22,955	167,998	1,242	64	.....	151	691	77,042	.....
Villages	798	11,210	556	166	.....	60	.....	5,644	.....
Town	6,626	25,206	458	326	6,801	.....	.....	37,693	.....
City	31,055	126,803	3,638	14,720	25,100	3,803	1,237	332,500	35,000
County	4,828	.....	146	.....	.....	181	.....	30,000	.....
Totals ,									
1903	66,262	331,217	6,040	15,276	31,901	4,195	1,928	482,879	35,000
1902	49,492	310,771	6,353	1,613	27,388	8,693	2,189	318,710	29,400
Essex :									
Townships	20,303	197,495	2,803	47	.....	1,882	.....	32,109	7,437
Villages	170	1,763	192	31	.....	.....	.....	550	.....
Towns	8,805	99,721	3,393	1,205	14,970	201	100	125,922	4,250
City	3,400	160,070	3,848	4,374	42,468	9,326	1,596	200,119	.....
County	10	.....	210	.....	.....	.....	.....	23,601	.....
Totals ;									
1903	32,688	459,049	10,446	5,657	57,438	11,409	1,696	382,301	11,687
1902	33,707	462,376	9,246	5,620	51,872	10,070	109,510	237,049	4,500

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Receipts.—*Continued.*						Disbursements.					
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Roads, streets, bridges and parks.	Waterworks and electric light construction.
$	$	$	$	$	$	$	$	$	$	$	$
.....	.....	20	.....	2,583	96,622	7,783	.....	676	2,820	20,016	.....
.....	27,448	.....	.....	5,985	190,461	10,786	4,822	34	1,648	15,009	7,361
.....	27,448	20	.....	8,568	287,083	18,569	4,822	710	4,468	35,025	7,361
.....	125,823	12	.....	6,931	372,782	16,829	5,244	348	5,133	66,327	102,291
.....	.....	.....	.....	807	97,834	4,972	.....	285	1,170	17,154	.....
.....	45,285	310	.....	239	99,394	2,131	8,995	196	914	1,563	26,156
.....	17,908	65	.....	33,833	322,832	7,689	51,517	694	3,426	25,486	14,150
.....	.....	.....	.....	20,874	33,192	2,061	.....	200	1,975	85	.....
.....	63,193	375	.....	55,753	553,252	16,853	60,512	1,375	7,485	44,288	40,306
.....	37,827	361	.....	36,171	510,778	14,155	49,746	5,065	9,804	57,116	18,203
.....	.....	.....	1,121	3,656	218,138	9,929	.....	1,310	3,483	31,569	.....
.....	32,747	43	248	6,324	138,121	2,342	6,124	134	2,473	15,643	5,096
.....	14,806	.....	191	2,941	168,842	2,111	12,108	1,137	3,284	16,454	1,673
.....	.....	.....	.....	47,181	78,668	3,846	.....	462	3,041	3,776	.....
.....	47,553	43	1,560	60,102	603,769	18,228	18,232	3,043	12,281	67,442	6,769
10,000	107,252	1,132	1,410	54,817	633,226	18,116	14,109	2,580	11,092	68,729	19,979
.....	.....	.....	.....	1,081	166,198	9,050	.....	542	2,844	23,798	.....
.....	22,500	177	.....	337	50,644	1,328	3,622	592	736	4,629	10,005
.....	450,845	.....	.....	14,830	2,032,550	20,993	212,817	1,250	16,348	178,160	63,766
.....	.....	.....	.....	43,792	83,709	3,707	.....	555	3,335	6,528	.....
.....	473,345	177	.....	60,040	2,333,101	35,078	216,439	2,939	23,263	213,115	73,771
21,031	285,230	1,509	500	53,301	2,029,706	32,683	158,457	5,521	26,077	169,092	131,229
.....	.....	.....	45	545	96,938	3,749	.....	1,324	1,371	14,992	.....
.....	731	.....	.....	292	22,816	516	1,573	4	630	5,715	.....
.....	4,463	.....	.....	437	46,246	790	3,085	295	717	1,217	.....
.....	.....	.....	.....	16,104	27,116	1,531	.....	92	877	1,569	.....
.....	5,194	.....	45	17,378	193,116	6,586	4,658	1,715	3,595	23,493	.....
925	5,524	45	59	20,669	197,480	6,860	3,310	936	3,541	22,256	1,333
1,928	.....	40	.....	2,726	274,837	8,148	.....	2,324	3,981	44,987	.....
.....	1,100	8	375	197	20,114	931	448	402	607	4,318	.....
.....	3,300	.....	.....	154	80,564	620	9,380	10	741	2,783	17,682
.....	47,755	.....	.....	1,219	622,830	7,127	32,345	2,542	5,466	35,111	972
.....	.....	.....	.....	53,875	89,030	3,418	.....	136	2,618	7,633	.....
1,928	52,155	48	375	58,171	1,087,375	20,244	42,173	5,414	13,413	94,832	18,654
963	95,126	76	225	52,799	903,798	19,799	38,255	5,725	12,456	79,365	30,048
111,651	7,273	3,302	.....	13,455	397,757	13,252	.....	1,978	5,041	42,938	.....
.....	1,500	8	.....	2	4,216	126	.....	.....	123	674	.....
.....	49,460	709	59	1,546	310,341	5,311	20,974	625	4,007	44,667	29,950
.....	58,659	.....	.....	8,544	492,404	7,460	41,275	829	5,220	84,922	4,483
.....	.....	.....	.....	38,239	62,060	3,477	.....	144	2,995	1,947	.....
111,651	116,892	4,019	59	61,786	1,266,778	29,626	62,249	3,576	17,386	175,148	34,43
19,996	79,440	734	.....	61,650	1,085,770	26,366	60,412	7,676	14,578	136,468	16,71

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Disbursements.—*Continued.*								
	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund, investments and deposits.	Other investments and deposits.
Algoma :	$	$	$	$	$	$	$	$	$
Townships	175	566	440	.....	.....	27,385	.....	798	312
Towns	20,253	247	240	3,095	.....	20,513	.....	5,507	.....
Totals :									
1903	20,428	813	680	3,095	.....	47,898	.....	6,305	312
1902	5,041	2,682	782	1,956	.....	53,753	53	6,741	808
Brant :									
Townships	331	484	2,396	.....	11,657	34,188	723	.....	4,171
Town	.....	169	450	621	1,113	7,409	.....	.....	350
City	15,500	4,340	6,790	7,900	.....	41,665	.....	32,234	14,284
County	230	.....	1,117	10,146	.....	3,450	.....	.....	.....
Totals :									
1903	16,061	4,993	10,753	18,667	12,770	86,712	723	32,234	18,805
1902	20,532	4,771	13,815	16,916	12,719	79,543	404	33,401	17,370
Bruce :									
Townships	718	1,925	672	.....	31,616	79,316	6,193	340	4,121
Villages	300	981	145	874	2,850	20,205	.....	22,941	295
Towns	3,100	1,367	590	1,479	2,324	14,734	.....	10,709	35,114
County	.....	.....	5,813	9,617	.....	14,875	.....	.....	4,000
Totals :									
1903	4,118	4,273	7,220	11,970	36,790	129,130	6,193	33,990	43,530
1902	2,779	3,846	4,724	10,797	37,757	120,245	1,180	26,244	35,182
Carleton :									
Townships	1,000	1,036	513	.....	23,916	55,508	12,265	40	2,335
Villages	243	1,136	25	509	2,193	7,489	.....	431	3,949
City	66,027	11,106	36,272	62,764	.....	183,314	.....	130,755	46,200
County	2,516	.....	1,950	22,177	.....	7,133	.....	2,947	.....
Totals :									
1903	69,786	13,278	38,760	85,450	26,109	253,444	12,265	134,173	52,484
1902	64,975	35,758	12,626	77,982	22,629	257,014	6,034	78,424	30,101
Dufferin :									
Townships	.....	429	248	.....	13,893	35,010	624	.....	.....
Villages	49	56	75	332	1,005	5,308	.....	.....	.....
Town	.....	22	289	750	840	8,100	.....	4,629	60
County	.....	.....	398	5,944	.....	5,237	.....	2,198	.....
Totals :									
1903	49	507	1,010	7,026	15,738	53,655	624	6,827	60
1902	486	682	395	6,771	13,694	49,059	828	5,846	23
Elgin :									
Townships	.....	1,033	413	.....	34,549	48,083	14,744	1,643	.....
Villages	.....	200	89	76	784	3,474	.....	.....	113
Town	.....	1,582	21	428	900	5,275	.....	.....	.....
City	26,454	2,565	3,468	5,616	.....	74,722	.....	6,549	9,378
County	.....	.....	5,758	11,376	.....	12,960	.....	.....	.....
Totals :									
1903	26,454	5,380	9,749	17,496	36,233	144,514	14,744	8,192	9,491
1902	2,501	2,478	9,571	15,066	33,432	114,215	5,112	8,566	1,237
Essex :									
Townships	21	6,458	2,128	.....	19,054	68,650	80,115	.....	7,077
Villages	310	43	.....	6	78	668	.....	.....	.....
Towns	123	2,251	1,067	4,059	3,046	32,651	.....	.....	.....
City	214	3,620	2,867	9,376	.....	43,516	.....	20,564	18,089
County	.....	.....	6,190	11,547	.....	8,969	.....	.....	.....
Totals :									
1903	668	12,372	12,252	24,988	22,178	154,454	80,115	20,564	25,166
1902	3,976	4,532	13,680	23,151	24,952	124,947	24,926	42,848	2,264

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Disbursements.—*Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.
$	$	$	$	$	$	$	$	$	$	$
1,014	.....	.....	18,255	1,651	.....	3,299	85,190	11,432	59,200	2,479
.....	.....	664	58,429	28,301	.....	11,239	188,148	2,313	63,319	37,404
1,014	.....	664	76,684	29,952	.....	14,538	273,338	13,745	122,519	39,883
780	.....	659	61,601	26,193	298	3,126	360,645	12,137	80,542	33,578
1,477	974	1,251	1,825	1,383	.....	1,303	85,744	12,090	2,511	.....
450	.....	4,178	23,925	4,329	.....	542	83,491	15,903	40	7,600
439	.....	5,653	23,061	48,303	.....	19,429	322,560	272	2,452	263,839
.....	.....	1,265	.....	265	.....	698	21,492	11,700	.....	.....
2,366	974	12,347	48,811	54,280	.....	21,972	513,287	39,965	5,003	271,439
2,192	554	13,545	42,838	53,140	.....	17,182	483,011	27,767	6,485	250,949
3,861	616	1,244	13,546	3,513	.....	2,235	196,207	21,931	20,879	8,072
600	.....	4,984	23,524	7,883	885	2,275	120,554	17,567	7,478	26,945
207	.....	5,830	29,696	13,778	27	4,484	160,206	8,636	4,938	24,502
.....	.....	786	15,000	934	.....	9,850	72,000	6,668	.....	.....
4,668	616	12,844	81,766	26,108	912	18,844	548,967	54,802	33,295	59,519
3,475	603	19,901	109,734	24,860	1,082	46,574	583,588	49,638	39,319	54,358
1,673	3,102	1,766	11,690	3,539	.....	2,837	157,454	8,744	64,703	1,383
334	.....	2,298	3,091	5,202	500	760	49,072	1,572	18,161	3,366
400	.....	238,508	428,412	219,640	.....	59,097	1,975,829	56,721	220,000	2,036,440
.....	.....	.....	24,063	3,208	.....	5,590	83,709	.....	.....	26,898
2,407	3,102	242,572	467,256	231,589	500	68,284	2,266,064	67,037	302,864	2,068,087
2,216	3,104	53,470	430,515	293,618	.....	50,646	1,942,171	87,535	312,216	1,826,983
1,335	1,402	665	16,957	1,373	.....	503	93,875	3,063	5,413	.....
170	.....	1,817	2,600	1,728	.....	1,033	22,611	205	169	.....
166	.....	2,666	13,849	5,966	50	2,755	46,246	.....	2,044	15,225
.....	.....	.....	7,849	766	.....	434	26,895	221	.....	11,727
1,671	1,402	5,148	41,255	9,833	50	4,725	189,627	3,489	7,626	26,952
1,878	1,382	8,233	50,174	10,013	.....	2,909	190,609	6,871	9,563	34,549
1,788	7,115	1,661	79,139	5,943	79	2,025	257,655	17,182	39,994	8,586
140	.....	512	4,654	731	.....	325	17,804	2,310	4,303	811
1,021	.....	7,310	26,643	5,137	.....	1,031	80,564	.....	1,000	.....
1,769	.....	26,557	330,500	31,319	1,413	9,183	613,056	9,774	25,467	109,933
.....	.....	3,247	23,000	2,046	.....	1,550	73,742	15,288	.....	.....
4,718	7,115	39,287	463,936	45,176	1,492	14,114	1,042,821	44,554	70,764	119,330
3,964	8,076	39,172	331,365	45,203	73	31,857	837,536	66,262	70,349	111,716
1,315	35,912	5,025	28,745	13,132	195	4,177	335,213	62,544	183,054	.....
.....	.....	.....	271	13	.....	1,600	3,912	304	442	.....
2,374	.....	19,334	111,187	19,259	550	1,823	303,258	7,083	41,481	1,400
1,899	.....	21,561	167,175	39,968	720	17,511	491,269	1,135	47,385	180,724
.....	.....	2,018	15,167	2,430	.....	7,176	62,060	.....	.....	.....
5,588	35,912	47,938	322,545	74,802	1,465	32,287	1,195,712	71,066	272,362	182,124
5,795	42,116	129,049	245,426	74,174	16	29,017	1,053,082	32,688	229,641	161,051

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets, December 31.—*Continued.*					Liabilities,	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
Algoma:	$	$	$	$	$	$	$
Townships	451	.....	10,200	22,539	106,301	.....	25,430
Towns	253,573	27,575	40,025	8,463	432,672	.....	15,826
Totals :							
1903	254,024	27,575	50,225	31,002	538,973	.....	41,256
1902	254,381	27,347	42,410	29,079	479,474	.....	20,707
Brant:							
Townships	75,718	.....	7,150	11,828	109,297	.....	1,122
Town	.....	103,076	53,000	2,450	182,069	.....	.....
City	87,284	347,540	332,926	215,468	1,249,781	.....	.....
County	.....	.....	106,000	.....	117,700	.....	.....
Totals :							
1903	163,002	450,616	499,076	229,746	1,658,847	.....	1,122
1902	168,734	420,693	555,466	232,320	1,662,414	.....	318
Bruce:							
Townships	9,006	.....	13,787	23,331	97,006	1,502	4,541
Villages	47,624	42,000	62,481	22,940	227,035	.....	1,858
Towns	67,320	135,385	80,795	18,898	340,474	773	4,582
County	.....	.....	80,000	8,054	94,722	.....	.....
Totals :							
1903	123,950	177,385	237,063	73,223	759,237	2,275	10,981
1902	80,800	169,029	229,565	68,458	691,167	3,924	5,520
Carleton:							
Townships	40,826	.....	20,710	13,189	149,555	21,531	20,146
Villages	4,449	99,649	16,343	2,995	146,535	2,058	4,244
City	16,527	2,100,000	686,000	1,011,314	6,127,002	.....	.....
County	.....	.....	185,000	23,457	235,355	.....	.....
Totals :							
1903	61,802	2,199,649	908,053	1,050,955	6,658,447	23,589	24,390
1902	177,432	2,173,047	901,480	1,185,409	6,664,102	21,278	25,969
Dufferin:							
Townships	.....	.....	3,200	6,439	18,115	605	884
Villages	.....	17,200	12,728	4,853	35,155	.....	.....
Town	83	50,312	22,900	713	91,277	1,050	2,762
County	.....	.....	40,000	5,307	57,255	.....	1,200
Totals :							
1903	83	67,512	78,828	17,312	201,802	1,655	4,846
1902	23	68,132	78,226	15,021	212,385	3,044	6,174
Elgin:							
Townships	.....	.....	7,575	35,943	109,280	13,807	2,223
Villages	.....	175	13,086	267	20,952	360	1,241
Town	.....	82,840	16,210	.....	100,050	.....	.....
City	9,378	152,000	164,453	17,758	488,763	.....	.....
County	.....	.....	175,000	27,143	217,431	.....	.....
Totals :							
1903	9,378	235,015	376,324	81,111	936,476	14,167	3,464
1902	1,237	217,215	338,515	104,125	909,419	18,654	1,120
Essex:							
Townships	7,077	.....	18,025	88,392	359,092	21,393	36,016
Villages	.....	.....	800	.....	1,546	96	.....
Towns	.....	179,431	49,928	118,019	397,342	2,226	10,573
City	18,294	302,000	110,500	162,045	822,083	.....	.....
County	.....	.....	111,000	29,113	140,113	.....	1,111
Totals :							
1903	25,371	481,431	290,253	397,569	1,720,176	23,715	47,700
1902	2,410	475,481	265,915	307,391	1,474,527	17,077	50,411

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Liabilities, December 31.—*Concluded.*

Railway debentures.	School debentures.	Drainage debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
.....	23,741	.....	.....	.....	1,000	12,516	501	5,174	68,362
.....	11,187	.....	14,597	12,694	533,063	62,533	.....	25,818	675,718
.....	34,928	.....	14,597	12,694	534,063	75,049	501	30,992	744,080
.....	34,492	.....	14,866	12,895	506,809	69,620	261	20,263	679,913
2,400	16,366	2,999	.....	.....	1,535	.....	800	4,826	30,048
.....	3,700	.....	65,750	13,982	26,194	.....	.....	.....	109,626
.....	70,997	.....	339,000	.....	748,451	9,100	.....	4,736	1,172,284
.....	.....	.....	.....	.....	4,951	.....	.....	.....	4,951
2,400	91,063	2,999	404,750	13,982	781,131	9,100	800	9,562	1,316,909
3,000	92,429	1,910	375,399	.....	775,081	27,261	525	8,457	1,284,380
18,352	22,792	12,749	.....	.....	5,500	6,539	.....	4,927	76,902
.....	27,224	.....	44,294	.....	118,842	14,264	4,076	286	210,844
.....	16,022	.....	100,811	7,807	178,396	40,350	2,614	2,559	353,914
.....	.....	.....	.....	.....	16,362	.....	.....	2,284	18,646
18,352	66,038	12,749	145,105	7,807	319,100	61,153	6,690	10,056	660,306
19,096	65,006	13,365	114,673	8,260	313,626	29,434	7,111	7,709	587,724
.....	11,345	28,231	.....	.....	16,241	11,301	.....	3,855	112,650
.....	9,973	.....	79,066	.....	38,317	9,300	175	1,248	144,381
370,000	357,900	.....	1,427,250	.....	3,827,953	301,002	.....	146,946	6,431,051
.....	.....	.....	.....	.....	60,000	15,709	.....	.....	75,709
370,000	379,218	28,231	1,506,316	.....	3,942,511	337,312	175	152,049	6,763,791
370,000	350,125	31,333	1,605,335	.....	3,612,719	410,973	175	155,207	6,583,114
1,423	6,052	5,096	.....	.....	3,903	1,107	.....	875	19,945
.....	7,857	.....	12,849	.....	9,468	5,060	.....	2,584	37,818
27,264	2,129	.....	38,081	.....	52,729	11	.....	839	124,865
.....	.....	.....	.....	.....	12,000	.....	.....	1,080	14,280
28,687	16,038	5,096	50,930	.....	78,100	6,178	.....	5,378	196,908
29,275	17,009	6,498	52,751	.....	75,665	4,782	711	5,763	201,652
34,740	22,895	29,937	.....	.....	.....	28,612	2,704	5,388	140,306
5,327	1,625	.....	.....	.....	6,168	2,336	.....	303	17,360
.....	3,350	.....	40,426	17,903	20,241	13,250	.....	1,226	96,396
.....	107,116	.....	116,022	.....	492,187	48,027	.....	.....	763,352
.....	.....	.....	.....	.....	37,650	23,000	.....	6,905	67,555
40,067	134,986	29,937	156,448	17,903	556,246	115,225	2,704	13,822	1,084,969
41,816	104,704	35,124	159,426	19,328	537,226	97,041	1,854	32,170	1,048,463
14,691	13,159	284,748	.....	.....	17,188	27,969	.....	67,824	482,988
.....	.....	.....	.....	.....	1,500	568	.....	14	2,178
9,741	22,895	.....	125,609	28,979	176,301	67,417	.....	3,965	447,706
.....	94,636	.....	116,541	15,000	475,531	107,134	.....	1,705	810,547
.....	.....	.....	.....	.....	43,167	23,601	.....	1,793	69,672
24,432	130,690	284,748	242,150	43,979	713,687	226,689	.....	75,301	1,813,091
29,741	124,591	209,009	207,243	31,178	687,132	169,073	.....	34,822	1,560,277

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.	Borrowed on debentures for schools.
Frontenac :	$	$	$	$	$	$	$	$	$
Townships	13,903	94,937	770	125	.....	184	610	4,246	550
Villages	720	4,585	72	.....	.....	.....	.....	.....	.....
City	14,646	159,599	8,241	4,844	34,159	5,024	15,966	50,000	.....
County	4,347	.....	145	2,724	.....	106	.....	32,021	.....
Totals :									
1903	33,616	259,121	9,228	7,693	34,159	5,314	16,576	86,267	550
1902	20,207	248,329	9,360	7,951	35,554	6,154	3,919	71,424	.....
Grey :									
Townships	18,856	207,058	1,140	200	.....	422	1,781	24,138	3,181
Villages	3,027	14,854	1,056	46	2,338	.....	.....	8,298	.....
Towns	25,729	147,354	2,116	4,435	31,437	6,418	40,240	157,038	.....
County	.....	.....	892	128	.....	990	1,359	.....	.....
Totals :									
1903	47,612	369,266	5,204	4,809	33,775	7,830	43,380	189,474	3,181
1902	66,985	281,544	4,319	3,915	13,230	8,962	20,558	67,297	10,200
Haldimand :									
Townships	7,054	68,275	596	53	.....	601	696	4,878	.....
Villages	1,808	12,397	851	149	.....	6	.....	34,601	.....
Town	.....	22,087	504	532	1,495	184	808	3,380	.....
County	4,352	.....	150	52	.....	15	.....	.....	.....
Totals :									
1903	13,214	102,759	2,101	786	1,495	806	1,504	42,859	.....
1902	5,994	91,918	2,153	376	1,483	786	2,129	24,134	.....
Haliburton :									
Townships	2,784	20,525	133	110	.....	8	.....	1,200	.....
County	1,186	.....	14	137	.....	14	.....	1,000	.....
Totals :									
1903	3,970	20,525	147	247	.....	22	.....	2,200	.....
1902	3,643	21,117	134	272	.....	64	109	1,254	225
Halton :									
Townships	7,152	61,047	264	53	.....	6,514	5,836	8,076	.....
Villages	1,389	19,253	682	417	4,531	165	1,051	9,212	.....
Towns	11,855	17,574	458	713	836	449	1,425	3,000	.....
County	3,623	.....	185	14	.....	26	.....	9,000	.....
Totals :									
1903	24,019	97,874	1,589	1,197	5,367	7,154	8,312	29,288	.....
1902	17,451	85,360	1,701	781	5,595	6,575	9,233	25,154	2,000
Hastings :									
Townships	5,803	129,749	1,000	275	.....	17	.....	9,045	2,550
Villages	1,102	18,271	1,298	168	.....	17	400	3,341	2,500
Towns	3,493	54,478	2,493	663	4,901	573	.....	89,063	.....
City	42	96,626	3,828	3,456	19,631	2,712	1,168	68,424	.....
County	2	.....	537	312	.....	283	.....	43,863	.....
Totals :									
1903	10,442	299,124	9,156	4,874	24,532	3,602	1,568	213,736	5,050
1902	8,738	285,867	9,229	5,266	22,746	4,253	20,622	206,479	4,321
Huron :									
Townships	29,004	199,828	1,141	197	.....	2,590	20,709	18,080	2,000
Villages	9,114	28,195	1,339	1,036	308	706	3,295	8,377	.....
Towns	19,437	77,617	3,062	2,607	11,045	3,571	7,025	108,692	.....
County	1,380	.....	1,086	74	.....	1,419	3,325	26,000	.....
Totals :									
1903	58,935	305,640	6,628	3,914	11,353	8,286	34,354	161,149	2,000
1902	50,231	284,884	6,667	2,734	13,207	9,290	120,598	212,117	3,850

INTO COUNTIES AND DISTRICTS FOR THE YEAR 1902 AND 1903.

Receipts.—*Continued.*						Disbursements.					
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Roads, streets, bridges and parks.	Waterworks and electric light construction.
$	$	$	$	$	$	$	$	$	$	$	$
.....	500	.....	.....	1,215	117,040	5,593	.....	681	1,844	13,269	.....
.....	.....	.....	.....	3	5,380	333	.....	.....	186	561	.....
.....	11,318	.....	.....	4,910	308,707	9,407	33,780	873	7,896	29,169	4,337
.....	.....	.....	.....	40,741	80,084	3,972	.....	310	1,546	4,538	.....
.....	11,818	.....	.....	46,869	511,211	19,305	33,780	1,864	11,472	47,537	4,337
.....	31,795	286	.....	53,140	488,119	18,447	33,392	1,712	10,503	30,731	15,517
1,689	.....	11	206	2,993	261,675	12,283	.....	4,011	4,351	49,036	.....
.....	.....	.....	.....	573	30,192	1,231	4,354	193	810	4,528	727
.....	96,270	.....	142	4,461	515,640	8,964	12,130	1,514	4,112	30,279	100,790
.....	.....	.....	.....	52,923	56,292	3,274	.....	.....	4,479	1,111	.....
1,689	96,270	11	348	60,950	863,799	25,752	16,484	5,718	13,752	84,954	101,517
.....	74,763	464	326	70,968	623,531	22,791	11,603	4,161	10,889	61,780	23,106
.....	.....	.....	.....	455	82,608	3,607	.....	111	1,265	11,238	.....
.....	8,684	.....	.....	306	58,802	1,164	362	114	588	6,704	684
.....	.....	.....	.....	104	29,094	1,296	4,184	91	822	4,265	265
.....	.....	.....	.....	20,805	25,374	1,866	.....	.....	1,705	455	.....
.....	8,684	.....	.....	21,670	195,878	7,933	4,546	316	4,380	22,662	949
.....	.....	.....	.....	31,599	160,572	6,934	3,666	324	2,995	14,053	.....
.....	.....	.....	53	1,317	26,130	2,529	.....	14	780	3,100	.....
.....	.....	.....	.....	6,424	8,775	846	.....	.....	223	424	.....
.....	.....	.....	53	7,741	34,905	3,375	.....	14	1,003	3,524	.....
..	.....	.....	50	9,464	36,332	3,102	.....	66	1,016	3,350	.....
.....	.....	.....	.....	187	89,129	3,795	.....	259	1,070	15,459	.....
.....	5,054	.....	.....	374	42,128	1,852	4,363	189	659	5,671	50
.....	10,000	163	.....	541	47,014	1,113	2,174	337	1,360	2,675	.....
.....	.....	.....	.....	19,726	32,574	1,533	.....	.....	861	5,158	.....
.....	15,054	163	.....	20,828	210,845	8,293	6,537	785	3,960	28,963	50
.....	4,204	.....	.....	15,357	173,411	7,152	6,681	312	3,955	18,750	1,001
.....	.....	.....	5,432	1,032	154,903	8,202	.....	177	3,260	15,113	.....
.....	1,100	.....	360	198	28,755	1,056	1,346	821	738	4,256	.....
.....	.....	.....	113	2,110	157,887	2,226	8,251	520	1,376	9,502	405
.....	5,125	.....	.....	3,208	204,220	3,534	25,622	512	4,953	9,205	.....
.....	.....	.....	.....	53,715	98,712	3,601	.....	18	2,064	20,855	.....
.....	6,225	.....	5,905	60,263	644,477	18,619	35,219	2,058	12,391	58,931	405
.....	10,000	34	6,014	61,548	645,117	21,461	34,649	1,190	10,180	54,769	2,437
18,737	.....	48	316	8,146	300,796	11,216	.....	162	3,094	56,714	.....
.....	14,800	.....	40	1,156	68,366	2,067	3,595	187	1,235	5,641	.....
.....	36,500	.....	1,857	12,078	283,491	5,527	20,645	1,145	4,117	12,879	35,158
.....	.....	.....	.....	46,491	79,775	4,026	.....	136	3,056	18,582	.....
18,737	51,300	48	2,213	67,871	732,428	22,836	24,240	1,630	11,502	93,816	35,158
3,920	112,369	102	4	54,267	874,240	21,600	17,690	1,749	8,563	65,912	7,404

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Disbursements.—*Continued.*

Counties and Districts.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police service.	County Treasurer for levies.	Payment on account of schools and education.	Drainage work.	Sinking Fund, investments and deposits.	Other investments and deposits.
Frontenac:	$	$	$	$	$	$	$	$	$
Townships	13	1,854	1,040	.....	28,988	42,731	174	.....	157
Villages	.....	382	.....	83	325	1,772	.....	.....	.....
City	115	1,774	3,672	15,548	.....	37,484	.....	23,767	2,281
County	.....	.....	2,575	14,808	.....	6,818	.....	.....	.....
Totals									
1903	128	4,010	7,287	30,439	29,313	88,805	174	23,767	2,438
1902	.....	1,619	6,034	28,045	29,932	87,209	5	10,430	297
Grey:									
Townships	323	2,202	2,944	.....	33,556	98,444	1,255	2,182	7
Villages	.....	127	94	49	788	3,243	.....	.....	.....
Towns	2,310	2,230	1,508	6,609	7,901	29,826	.....	58,046	7,000
County	13,357	.....	1,275	13,352	.....	14,872	.....	1,000	.....
Totals									
1903	15,990	4,559	5,821	20,010	42,245	146,385	1,255	61,228	7,007
1902	3,781	3,095	5,947	15,518	28,599	142,658	1,006	23,247	28
Haldimand:									
Townships	137	412	1,689	.....	19,735	31,297	1,347	.....	768
Villages	.....	40	91	111	854	5,194	.....	.....	8,000
Towns	340	91	766	492	800	3,185	.....	403	.....
County	889	.....	75	7,946	.....	9,433	.....	.....	.....
Totals									
1903	1,366	543	2,621	8,549	21,389	49,109	1,347	403	8,768
1902	5,408	941	2,172	8,216	19,249	50,219	312	1,178	544
Haliburton:									
Townships	197	292	382	.....	1,997	10,656	.....	45	.....
County	.....	.....	22	878	.....	3,996	.....	.....	.....
Totals									
1903	197	292	404	878	1,997	14,652	.....	45	.....
1902	563	68	216	949	3,273	14,088	.....	50	.....
Halton:									
Townships	250	475	1,544	.....	14,409	27,023	.....	.....	6,184
Villages	.....	139	310	55	1,223	7,661	.....	729	.....
Towns	.....	45	25	882	991	2,375	.....	250	900
County	.....	.....	.....	5,618	.....	5,833	.....	.....	.....
Totals									
1903	250	659	1,879	6,555	16,623	42,892	.....	979	7,084
1902	370	2,685	2,251	6,169	10,884	36,877	.....	4,019	12,048
Hastings:									
Townships	291	1,552	2,827	.....	37,215	63,823	.....	.....	.....
Villages	75	451	639	288	2,163	10,072	.....	.....	.....
Towns	1,444	1,924	1,103	2,005	1,850	15,270	.....	93	.....
City	.....	330	1,806	8,204	.....	17,107	.....	13,996	1,383
County	.....	.....	240	16,365	.....	12,276	.....	.....	.....
Totals:									
1903	1,810	4,257	6,615	26,862	41,228	118,548	.....	14,089	1,383
1902	3,212	2,666	7,240	26,246	42,973	110,662	.....	16,412	2,086
Huron:									
Townships	350	564	445	.....	34,346	81,440	16,484	5,412	20,715
Villages	.....	232	190	296	1,243	7,766	.....	5,414	5,000
Towns	263	158	321	1,906	1,670	23,103	.....	16,020	35,330
County	5,566	.....	.....	8,145	.....	15,512	.....	7,060	.....
Totals:									
1903	6,179	954	956	10,347	37,259	127,821	16,484	33,912	61,045
1902	1,795	1,836	6,421	11,546	36,388	124,843	10,623	75,106	22,971

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Disbursements.—*Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears	Sinking Fund investments and deposits
$	$	$	$	$	$	$	$	$	$	$
432	.....	267	4,523	356	.....	1,941	103,863	13,177	30,177	.....
.....	.....	.....	213	.....	.....	183	4,038	1,342	1,255	.....
3,200	.....	21,649	50,000	46,243	.....	3,826	295,021	13,686	59,462	62,160
.....	.....	24,100	10,000	9,606	.....	1,700	79,973	111	.....	.....
3,632	.....	46,016	64,736	56,205	.....	7,650	482,895	28,316	90,894	62,160
3,615	.....	30,718	69,590	48,775	.....	27,932	454,503	33,616	92,726	58,078
2,200	553	543	23,374	2,892	.....	1,960	242,116	19,559	20,835	12,171
385	.....	1,660	5,816	2,360	173	530	27,068	3,124	892	.....
2,558	.....	7,702	122,032	40,439	530	20,753	467,233	48,407	54,197	114,491
.....	.....	.....	.....	800	.....	2,772	56,292	.....	.....	8,458
5,143	553	9,905	151,222	46,491	703	26,015	792,709	71,090	75,924	135,120
4,359	483	7,493	106,801	36,339	139	62,096	575,919	47,612	105,807	115,448
300	.....	.....	2,869	287	.....	1,009	76,071	6,537	1,910	4,640
326	.....	1,193	29,752	955	349	383	56,864	1,938	871	.....
.....	.....	1,729	8,396	1,805	.....	164	29,094	.....	1,540	1,558
.....	.....	.....	.....	177	.....	493	23,039	2,335	.....	.....
626	.....	2,922	41,017	3,224	349	2,049	185,068	10,810	4,321	6,198
610	.....	3,207	21,522	3,065	.....	2,743	147,358	13,214	10,196	5,795
644	.....	.....	1,554	306	.....	711	23,207	2,923	12,965	215
.....	.....	.....	1,000	18	.....	887	8,294	481	.....	.....
644	.....	.....	2,554	324	.....	1,598	31,501	3,404	12,965	215
837	.....	.....	3,087	460	.....	1,237	32,362	3,970	13,449	170
400	.....	.....	8,076	430	.....	1,062	80,436	8,693	4,626	54,497
1,000	.....	1,401	10,095	4,336	.....	552	40,295	1,833	2,149	5,399
74	.....	2,036	8,125	3,966	.....	831	28,159	18,855	3,662	19,103
.....	.....	.....	9,000	182	.....	1,175	29,360	3,214	.....	.....
1,474	.....	3,437	35,296	8,914	.....	3,620	178,250	32,595	10,437	78,999
1,250	.....	3,120	20,284	8,327	.....	3,257	149,392	24,019	15,880	24,699
2,057	.....	1,254	8,302	2,308	.....	585	146,966	7,937	68,835	.....
1,126	.....	850	2,866	1,498	16	332	28,593	162	12,870	.....
684	.....	2,015	92,833	11,202	.....	2,510	155,223	2,664	16,961	8,948
.....	.....	.....	85,122	31,113	.....	1,333	204,220	.....	65,381	90,253
.....	.....	.....	33,054	1,646	.....	8,589	98,708	4	.....	.....
3,867	.....	4,119	222,177	47,767	16	13,349	633,710	10,767	164,047	99,201
3,750	.....	21,642	207,193	48,507	.....	17,400	634,675	10,442	167,295	85,512
3,143	5,650	183	18,258	4,164	.....	6,862	269,202	31,594	16,599	43,644
247	.....	3,434	15,885	5,449	241	3,030	61,152	7,214	911	19,733
.....	.....	6,535	80,323	19,807	.....	2,979	267,886	15,605	7,459	91,729
.....	.....	.....	6,000	3,208	.....	1,681	72,978	6,797	.....	33,613
3,390	5,650	10,152	120,466	32,628	241	14,552	671,218	61,210	24,969	188,719
2,922	6,185	6,554	293,592	31,555	55	59,995	815,305	58,935	20,978	135,134

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets, December 31.—*Continued.*					Liabilities.	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
	$	$	$	$	$	$	$
Frontenac :							
Townships	3,447		12,362	1,182	60,345	26,896	3,718
Villages			3,109		5,706	575	915
City	24,182	288,633	278,691	24,400	751,214		3,581
County	2,000		117,000	34,505	153,616		
Totals :							
1903	29,629	288,633	411,162	60.087	970,881	27,471	8,214
1902	24,082	348,801	411,180	59,774	1,028,257	25,996	6,287
Grey :							
Townships	3,658		13,456	25,504	95,183	2,702	5,668
Villages		32,500	3,678	11,035	51,229	161	839
Towns	53,000	235,591	118 910	50,182	674,778		20,262
County	31,704		87,638	6,866	134,666		35
Totals :							
1903	88,362	268,091	223,682	93,587	955,856	2,863	26,804
1902	83,254	190,717	229,370	65,388	837,596	4,420	28,352
Haldimand :							
Townships	6,088		6,782	1,586	27,543		
Villages	8,000	684	14,550	41	26,084	257	
Town	7,792	15,000	13,750	616	40,256		3,450
County			40,000	7,079	49,414		
Totals :							
1903	21,880	15,684	75,082	9,322	143,297	257	3,450
1902	14,616	15,000	74,740	3,689	137,250		3,086
Haliburton :							
Townships			3,755	4,896	24,754	1,060	9,036
County				1,008	1,489		20
Totals :							
1903			3,755	5,904	26,243	1,060	9,056
1902			3,761	5,910	27,260	277	9,396
Halton :							
Townships	66,292		5,725	5,325	145,158		1,658
Villages	11,500	51,300	36,350	3,547	112,078	350	
Towns	3,290	24,900	29,520	9,011	108,341	500	4,586
County			45,000	985	49,199		
Totals ,							
1903	81,082	76,200	116,595	18,868	414,776	850	6,244
1902	135,631	76,850	115,505	23,794	416,378	3,564	7,354
Hastings:							
Townships	252		13,837	13,574	104,435	27,471	15,241
Villages	5,000		14,000	122	32,154	3,071	1,662
Towns		59,000	126,747	1,069	215,389	3,239	
City	57,656	193,111	93,542	93,482	593,425		
County			63,722	42,074	105,800		2,000
Totals:							
1903	62,908	252,111	311,848	150,321	1,051,203	33,781	18,903
1902	62,693	252,111	309,088	148,122	1,035,263	26,461	23,300
Huron:							
Townships	16,531		12,814	25,488	146,670	21,126	1,527
Villages	10,200	3,425	30,050	19,557	91,090	185	3,783
Towns	114,314	166,446	85,480	30,201	511,234	2,362	1,800
County			77,000	27,993	145,403		
Totals:							
1903	141,045	169,871	205,344	103,239	894,397	23,673	7,110
1902	134,027	138,577	204,505	86,330	778,486	18,236	5,796

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Liabilities, December 31.—*Concluded.*

Railway debentures.	School debentures.	Drainage debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
.....	1,666	.....	.....	.....	2,265	131	.....	1,261	35,937
.....	.....	.....	.....	.....	.....	.....	.....	94	1,584
60,430	54,300	.....	251,050	.....	603,548	50,500	.....	21,114	1,044,523
92,900	.....	.....	.....	.....	.....	32,021	.....	62	124,983
153,330	55,966	.....	251,050	.....	605,813	82,652	.....	22,531	1,207,027
178,729	59,048	.....	257,000	.....	608,662	62,121	.....	27,320	1,225,163
10,500	24,899	8,964	.....	.....	4,875	2,400	181	1,750	61,939
.....	3,384	.....	24,091	4,287	18,909	3,198	.....	1,474	56,343
143,414	37,206	.....	153,152	71,000	420,707	73,616	11,750	2,934	934,041
.....	.....	.....	.....	.....	20,000	.....	.....	170	20,205
153,914	65,489	8,964	177,243	75,287	464,491	79,214	11,931	6,328	1,072,528
155,470	67,451	7,828	178,606	4,476	446,018	42,797	11,103	10,384	956,905
.....	1,500	.....	.....	.....	.....	3,429	415	115	5,459
4,000	2,786	.....	.....	.....	9,191	10,500	.....	1,085	27,819
.....	.....	.....	.....	.....	33,719	3,380	.....	3,069	43,618
.....	.....	.....	.....	.....	.....	.....	.....	988	988
4,000	4,286	.....	.....	.....	42,910	17,309	415	5,257	77,884
4,500	4,912	.....	7,311	.....	29,337	15,434	415	239	65,234
.....	3,373	.....	.....	.....	.....	700	.....	882	15,051
.....	.....	.....	.....	.....	.....	.....	.....	639	659
.....	3,373	.....	.....	.....	.....	700	.....	1,521	15,710
.....	4,017	.....	.....	.....	.....	1,054	.....	1,646	16,390
.....	1,600	.....	.....	.....	.....	.....	.....	912	4,170
.....	12,300	.....	39,100	10,500	25,618	2,312	.....	.....	90,180
.....	1,926	.....	15,414	.....	65,464	.....	.....	2,796	90,686
....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	15,826	.....	54,514	10,500	91,082	2,312	.....	3,708	185,036
.....	17,300	.....	55,684	.....	88,795	7,644	676	1,578	182,595
27,231	11,919	.....	.....	.....	2,700	5,898	.....	3,804	94,264
.....	14,092	.....	.....	.....	18,922	2,858	.....	75	40,680
22,584	4,888	.....	30,125	.....	147,215	10,890	.....	13,029	231,970
.....	8,500	.....	192,000	.....	514,082	18,424	37,340	950	771,296
.....	.....	.....	.....	.....	.....	43,863	.....	4,196	50,059
49,815	39,399	.....	222,125	.....	682,919	81,933	37,340	22,054	1,188,269
23,106	38,216	.....	222,899	.....	706,748	89,998	37,344	21,774	1,189,846
14,700	15,095	68,015	.....	.....	560	900	660	2,069	124,652
6,204	12,125	.....	.....	.....	93,385	730	.....	.....	116,412
8,000	12,500	.....	79,258	24,259	406,528	44,000	.....	6,845	585,552
.....	.....	.....	.....	.....	73,000	20,000	.....	135	93,135
28,904	39,720	68,015	79,258	24,259	573,473	65,630	660	9 049	919,751
29,373	41,110	54,928	79,311	24,311	531,751	23,845	1,969	9,322	819,952

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses	Borrowed on debentures for schools.
Kent:	$	$	$	$	$	$	$	$	$
Townships	19,567	243,258	1,109	83	.....	2,913	.....	56,257	6,500
Villages	1,280	13,570	719	44	701	12	954	15,517	.....
Towns	10,850	63,902	3,328	2,703	7,561	98	.....	61,715	.....
City	2,376	151,770	3,705	2,066	18,433	170	3,920	166,959	.....
County	654	.....	430	223	.....	96	.....	29,253	.....
Totals:									
1903	34,727	472,500	9,291	5,119	26,695	3,289	4,874	329,701	6,500
1902	39,819	401,877	8,527	5,739	30,074	1,828	24,674	259,223	5,000
Lambton:									
Townships	21,891	215,465	1,159	81	.....	887	.....	10,839	4,900
Villages	3,153	27,969	2,201	287	.....	15	510	54,417	1,900
Towns	1,353	120,072	4,536	2,533	34,880	6,174	1,239	230,057	4,000
County	2,838	.....	184	87	.....	299	.....	13,000	.....
Totals:									
1903	29,235	363,506	8,080	2,988	34,880	7,375	1,749	308,313	10,800
1902	37,694	362,663	7,365	2,432	33,740	1,431	3,151	239,504	2,525
Lanark:									
Townships	9,299	74,591	607	81	.....	1,315	780	3,034	.....
Villages	700	4,615	170	133	.....	.....	.....	1,275	.....
Towns	23,515	101,906	6,545	2,346	11,549	75	513	26,912	.....
County	6,095	.....	378	24	.....	.....	.....	36,747	.....
Totals:									
1903	39,609	181,112	7,700	2,584	11,549	1,390	1,293	67,968	.....
1902	23,695	181,844	9,677	2,304	11,698	1,354	.....	111,893	8,950
Leeds & Grenville:									
Townships (L.	7,406	110,008	1,140	528	.....	2,149	.....	13,683	1,200
Townships (G.	4,249	52,960	197	809	.....	1,454	205	2,000	.....
Villages (L.	1,233	5,718	151	31	.....	130	700	.....	.....
Villages (G.	821	19,408	1,066	241	.....	.....	250	8,747	.....
Towns (L.	4,293	127,074	8,781	5,301	63,672	6,914	68,604	197,662	.....
Towns (G.	8,298	25,175	1,874	1,273	12,052	97	.....	17,823	1,350
United Counties	149	.....	488	48	.....	711	.....	14,590	.....
Totals:									
1903	26,449	340,343	13,697	8,231	75,724	11,455	69,759	254,505	2,550
1902	33,539	292,498	10,810	8,689	67,665	11,802	11,034	288,725	.....
Lennox and Add.:									
Townships	2,804	80,661	373	55	.....	2,190	10,883	7,067	.....
Villages	484	5,666	128	46	.....	60	.....	300	.....
Town	1,855	30,895	2,254	703	75	32	.....	.....	.....
County	11,290	.....	426	143	.....	146	.....	.....	.....
Totals:									
1903	16,433	117,222	3,181	947	75	2,428	10,883	7,367	.....
1902	16,663	107,769	2,417	774	50	2,191	10,359	2,956	.....
Lincoln:									
Townships	4,629	76,785	321	188	.....	115	918	6,518	.....
Villages	6,394	29,583	1,425	1,525	3,410	85	1,605	5,004	.....
Town	550	13,658	327	911	4,075	26	.....	5,500	.....
City	1,775	129,742	3,279	3,950	26,894	2,242	38,283	34,798	.....
County	1,849	.....	190	60	.....	68	.....	2,500	.....
Totals:									
1903	15,197	249,768	5,542	6,634	34,379	2,536	40,806	54,320	.....
1902	12,292	225,019	7,476	5,352	35,554	3,212	8,124	87,509	4,300

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Receipts.—*Continued.*						Disbursements.					
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Roads, streets, bridges and parks.	Waterworks and electric light construction.
$	$	$	$	$	$	$	$	$	$	$	$
59,794	13,500	769	564	8,864	413,178	12,882	.....	1,614	3,926	46,161	.....
.....	1,007	.....	50	301	34,155	604	2,383	12	594	3,687	500
.....	45,023	119	258	1,953	197,510	3,201	15,582	665	3,102	14,705	241
.....	45,596	.....	.....	17,170	412,165	5,485	25,930	284	3,661	118,148	3,148
.....	.....	.....	.....	61,260	91,916	5,184	.....	300	3,398	1,105	.....
59,794	105,126	888	872	89,548	1,148,924	27,356	43,845	2,875	14,681	183,806	3,889
11,744	51,826	549	1,864	86,365	929,109	26,141	47,350	5,631	13,286	72,582	4,671
39,171	.....	268	240	4,524	299,425	10,168	.....	1,893	4,383	54,420	.....
.....	14,221	689	.....	707	106,069	2,535	2,595	1,047	1,346	18,117	.....
.....	101,632	.....	.....	1,438	507,914	6,427	32,606	1,571	3,768	49,316	28,961
.....	.....	.....	.....	44,052	60,460	3,337	.....	239	3,254	3,310	.....
39,171	115,853	957	240	50,721	973,868	22,467	35,201	4,750	12,751	125,163	28,961
7,979	52,886	427	150	60,639	812,586	23,094	31,335	3,216	10,911	84,694	34,920
.....	2,000	.....	.....	642	92,349	5,553	.....	472	2,079	9,744	.....
.....	2,900	.....	.....	8	9,801	384	540	18	181	279	.....
.....	52,062	13	.....	4,103	229,539	4,696	18,573	227	3,910	33,703	39,020
.....	.....	.....	.....	37,054	80,298	2,823	.....	432	2,657	21,743	.....
.....	56,962	13	.....	41,807	411,987	13,456	19,113	1,149	8,827	65,469	39,020
.....	66,486	1,077	.....	31,618	450,596	12,574	15,935	1,926	8,454	48,432	48,255
.....	.....	.....	.....	822	136,936	5,681	.....	440	1,914	25,248	.....
.....	.....	.....	.....	166	62,040	3,015	.....	330	1,060	8,895	.....
.....	.....	.....	.....	40	8,003	242	57	5	154	1,348	.....
.....	4,500	.....	.....	3,838	38,871	896	2,347	.....	596	4,702	.....
.....	43,236	.....	.....	956	526,493	4,631	61,728	634	5,099	20,675	49,296
.....	4,823	33	.....	217	73,015	1,565	12,493	249	1,447	8,809	2,012
.....	.....	.....	.....	37,714	53,700	3,461	.....	6	2,889	954	.....
.....	52,559	33	.....	43,753	899,058	19,491	76,625	1,664	13,159	70,631	51,308
.....	110,523	684	25	41,943	877,937	19,862	56,589	8,321	13,215	66,425	64,630
.....	.....	.....	.....	553	104,586	4,294	.....	321	1,354	11,778	.....
.....	.....	.....	.....	4	6,688	441	61	1	151	628	.....
.....	.....	.....	.....	315	36,129	1,561	4,370	202	552	3,189	.....
.....	.....	.....	.....	34,288	46,293	1,936	.....	20	2,607	321	.....
.....	.....	.....	.....	35,160	193,696	8,232	4,431	544	4,664	15,916	.....
.....	.....	.....	.....	29,678	172,857	7,602	4,410	1,596	3,682	16,028	.....
.....	.....	.....	.....	1,526	91,000	4,804	.....	180	1,030	14,239	.....
.....	3,000	101	.....	1,297	53,429	2,275	4,664	305	828	5,239	218
.....	.....	.....	.....	84	25,131	932	4,969	66	688	1,617	.....
.....	32,185	.....	.....	18,316	291,464	6,821	24,572	515	4,473	19,938	7,884
.....	.....	.....	.....	36,857	41,524	2,534	.....	100	3,938	3,565	.....
.....	35,185	101	.....	58,080	502,548	17,366	34,205	1,166	10,957	44,598	8,102
1,819	14,500	158	.....	38,304	443,619	14,835	34,796	1,405	7,575	54,520	1,059

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Disbursements.—*Continued.*

Counties and Districts.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police service.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
Kent:	$	$	$	$	$	$	$	$	$
Townships	2,756	3,275	4,973	.....	30,233	73,333	63,140	.....	1,408
Villages	.....	314	74	519	246	3,044	.....	.....	774
Towns	733	2,985	601	2,259	3,155	18,011	.....	.....	.....
City	11,714	1,208	2,132	6,877	.....	23,493	.....	.....	30,515
County	2,110	.....	4,880	15,711	.....	12,667	.....	.....	.....
Totals:									
1903	17,313	7,782	12,660	25,366	33,634	130,548	63,140	.....	32,697
1902	12,502	12,506	9,813	20,297	33,575	121,266	16,959	224	40,301
Lambton:									
Townships	157	871	2,557	.....	28,167	77,570	36,719	.....	.....
Villages	77	108	314	164	1,568	10,595	.....	.....	710
Towns	181	959	1,315	4,900	6,559	38,706	.....	1,970	.....
County	1,552	.....	4,287	10,367	.....	16,099	.....	.....	.....
Totals:									
1903	1,967	1,938	8,473	15,431	36,294	142,970	36,719	1,970	710
1902	10,280	3,470	10,287	15,605	34,933	120,499	14,953	2,128	1,200
Lanark:									
Townships	133	508	205	.....	19,239	36,768	534	1,050	681
Villages	3,000	35	41	145	415	2,000	.....	.....	.....
Towns	938	650	543	2,457	7,336	34,517	.....	1,194	2,439
County	7,582	.....	2,692	7,225	.....	7,360	.....	.....	.....
Totals:									
1903	11,653	1,193	3,481	9,827	26,990	80,645	534	2,244	3,120
1902	22,825	7,684	3,020	9,738	24,557	78,267	262	1,667	380
Leeds & Grenville:									
Townships.. L.	156	1,287	341	.....	12,989	49,573	.....	5,875	7
Townships.. G.	658	100	155	.....	9,796	27,361	919	173	521
Villages .... L.	225	.....	3	58	358	1,659	.....	257	263
Villages .... G.	4,539	75	202	209	1,005	5,713	.....	.....	3,767
Towns..... L.	847	1,834	2,290	9,141	1,373	30,340	.....	18,814	30,133
Towns..... G.	744	25	388	840	.....	6,888	.....	.....	1,249
United Counties..	1,199	.....	5,251	8,619	.....	14,505	.....	2,033	.....
Totals:									
1903	8,368	3,321	8,630	18,867	25,521	136,039	919	27,152	35,940
1902	26,288	6,424	8,736	19,878	25,186	131,172	2,501	31,612	24,179
Lennox and Add.:									
Townships	2,100	2,959	1,413	.....	24,188	33,211	.....	1,322	10,047
Villages	.....	94	133	24	619	2,890	.....	.....	.....
Town	611	274	539	645	4,800	8,800	.....	.....	.....
County	.....	.....	530	6,528	.....	9,181	.....	.....	.....
Totals:									
1903	2,711	3,327	2,615	7,197	29,607	54,082	.....	1,322	10,047
1902	407	1,062	2,866	6,410	24,154	51,809	.....	10,049	113
Lincoln:									
Townships	.....	125	167	.....	23,892	27,849	2,029	.....	.....
Villages	.....	10	173	538	1,955	11,174	.....	.....	3,169
Town	.....	26	83	473	758	2,284	.....	.....	.....
City	13,986	899	2,227	4,325	.....	25,145	.....	53,478	6,033
County	2,500	.....	4,394	7,824	.....	8,838	.....	.....	.....
Totals:									
1903	16,486	1,060	7,044	13,160	26,605	75,290	2,029	53,478	9,202
1904	6,290	2,183	6,726	16,079	22,433	70,214	876	15,015	5,667

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Disbursements. – *Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.
$	$	$	$	$	$	$	$	$	$	$
5,168	55,250	3,502	56,288	22,363	284	5,668	392,224	20,954	144,577	.....
283	.....	2,960	14,706	1,661	.....	295	32,656	1,499	2,559	704
1,560	.....	9,674	55,695	14,529	.....	42,178	188,826	8,684	19,225	.....
.....	.....	29,738	112,459	32,098	.....	2,949	409,839	2,326	37,803	.....
.....	.....	3,028	21,727	2,411	.....	18,621	91,142	774	.....	.....
7,011	55,250	48,902	260,875	73,062	284	69,711	1,114,687	34,237	204,164	704
8,213	55,559	40,463	225,244	69,619	.....	58,180	894,382	34,727	222,273	656
2,275	36,788	1,759	11,163	7,927	.....	3,667	280,484	18,941	108,318	.....
678	.....	3,346	54,210	2,286	.....	2,184	101,880	4,189	6,451	.....
2,389	.....	40,012	241,115	39,122	1,348	5,396	506,621	1,293	47,668	9,802
.....	.....	707	10,000	579	.....	3,715	57,446	3,014	.....	.....
5,342	36,788	45,824	316,488	49,914	1,348	14,962	946,431	27,437	162,437	9,802
8,432	40,011	44,736	215,226	46,766	.....	26,655	783,351	29,235	173,472	9,071
580	.....	828	3,359	1,312	31	358	83,434	8,915	6,985	4,082
342	.....	225	1,275	276	.....	86	9,242	559	.....	.....
1,236	.....	17,569	14,238	24,249	348	5,640	213,483	16,056	3,696	1,961
.....	.....	800	20,500	1,055	.....	2,367	77,236	3,062	.....	.....
2,158	.....	19,422	39,372	26,892	379	8,451	383,395	28,592	10,681	6,043
2,881	.....	17,784	80,611	19,725	391	5,619	410,987	39,609	8,213	4,312
240	.....	.....	14,960	4,827	.....	717	124,255	12,681	6,086	66,012
.....	.....	.....	2,864	448	.....	297	56,592	5,448	10,903	1,532
160	.....	.....	.....	249	.....	512	5,550	2,453	450	3,649
197	.....	2,641	8,090	1,607	.....	1,021	37,607	1,264	3,408	.....
.....	.....	38,412	200,859	40,913	751	6,846	524,616	1,877	24,207	173,702
536	.....	2,569	23,773	6,776	.....	1,635	71,998	1,017	12,940	.....
.....	.....	544	9,770	3,210	.....	1,060	53,501	199	.....	25,558
1,133	.....	44,166	260,316	58,030	751	12,088	874,119	24,939	57,994	270,453
1,795	5,000	13,581	251,013	52,373	.....	22,708	851,488	26,449	76,995	263,705
66	.....	321	6,579	487	.....	845	101,285	3,301	19,745	11,382
.....	.....	500	300	36	.....	48	5,926	762	3,060	.....
1,206	.....	2,831	.....	2,331	.....	525	32,436	3,693	12,582	.....
.....	.....	6,900	.....	3,869	.....	78	31,970	14,323	.....	.....
1,272	.....	10,552	6,879	6,723	.....	1,496	171,617	22,079	35,337	11,382
1,303	.....	10,723	4,555	7,580	.....	2,075	156,424	16,433	38,550	12,619
516	152	261	6,518	615	.....	1,718	84,095	6,905	8,317	.....
471	.....	1,834	6,400	4,378	.....	1,721	45,352	8,077	1,888	.....
.....	.....	2,839	7,550	2,479	.....	281	25,045	86	2,224	.....
.....	.....	.....	52,458	38,964	150	26,707	288,575	2,889	15,893	51,599
.....	.....	.....	2,000	253	.....	996	36,942	4,582	.....	.....
987	152	4,934	74,926	46,689	150	31,423	480,009	22,539	26,322	51,599
1,201	.....	10,648	82,368	49,024	500	25,008	428,422	15,197	36,853	34,831

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets, December 31.—*Continued.*					Liabilities.	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
	$	$	$	$	$	$	$
Kent:							
Townships	1,408	.....	17,350	127,427	311,716	13,769	12,775
Villages	2,648	17,969	12,031	6,824	44,234	519	1,600
Towns	900	27,700	112,903	16,690	186,102	2,310	5,225
City	51,610	210,921	160,404	286,495	749,559	.....	.....
County	.....	.....	180,000	25,077	205,851	.....	2,396
Totals:							
1903	56,566	256,590	482,688	462,513	1,497,462	16,598	21,996
1902	28,791	255,790	494,629	390,063	1,426,929	14,132	19,728
Lambton:							
Townships	.....	.....	12,345	127,052	266,656	9,746	14,321
Villages	400	1,400	18,410	97	30,947	287	1,000
Towns	30,800	317,000	160,380	190,513	757,456	.....	11,200
County	.....	.....	54,500	17,382	74,896	.....	.....
Totals:							
1903	31,200	318,400	245,635	335,044	1,129,955	10,033	26,521
1902	31,000	325,513	227,166	259,080	1,054,537	12,759	33,328
Lanark:							
Townships	17,630	.....	9,450	1,700	48,762	.....	717
Villages	.....	.....	9,700	.....	10,259	.....	.....
Towns	2,819	287,076	212,220	7,869	531,697	.....	10,152
County	.....	.....	83,000	3,292	89,354	.....	.....
Totals:							
1903	20,449	287,076	314,370	12,861	680,072	.....	10,869
1902	18,726	241,650	290,595	8,988	612,093	.....	9,869
Leeds & Grenville:							
Townships { L	16,273	.....	14,500	7,146	122,698	5,978	536
Townships { G	34,813	.....	9,500	325	62,521	10,206	.....
Villages { L	263	.....	2,905	78	9,798	.....	1,190
Villages { G	3,517	.....	22,089	595	30,873	266	.....
Towns { L	52,354	421,263	121,177	133,139	927,719	.....	.....
Towns { G	1,249	126,895	55,800	681	198,582	.....	1,120
United Counties	.....	.....	148,000	21,029	194,786	.....	.....
Totals:							
1903	108,469	548,158	373,971	162,993	1,546,977	16,450	2,846
1902	101,884	515,359	366,062	159,995	1,510,449	14,217	4,429
Lennox and Add.:							
Townships	37,436	.....	10,205	822	82,891	7,455	1,687
Villages	2,000	.....	1,800	25	7,647	.....	2,114
Town	.....	.....	26,628	309	43,162	.....	7,400
County	.....	.....	55,000	7,658	76,981	.....	.....
Totals:							
1903	39,436	.....	93,633	8,814	210,681	7,455	11,201
1902	37,713	.....	90,483	12,886	208,684	11,694	12,565
Lincoln:							
Townships	.....	.....	3,395	5,130	23,747	6,247	1,306
Villages	10,235	90,000	23,146	1,121	134,467	1,362	1,877
Town	.....	51,500	23,256	2,260	79,326	802	.....
City	65,289	372,080	181,868	118,102	807,720	.....	66
County	.....	.....	104,000	1,100	117,291	.....	.....
Totals:							
1903	75,524	513,580	335,665	135,322	1,162,551	8,411	3,249
1902	70,418	505,125	315,752	149,665	1,127,841	9,981	5,252

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Liabilities, December 31.—*Concluded.*

Railway debentures.	School debentures.	Drainage debentures.	Water works debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
21,115	27,908	357,661	.....	.....	29,276	41,437	.....	50,190	554,131
.....	2,279	.....	3,215	222	19,350	1,603	62	2,432	31,282
13,389	11,794	.....	.....	20,127	215,540	46,376	.....	232	314,993
.....	.....	.....	146,952	11,788	475,947	195,856	.....	14,177	844,720
.....	.....	.....	.....	.....	31,833	29,173	.....	1,609	65,011
34,504	41,981	357,661	150,167	32,137	771,946	314,445	62	68,640	1,810,137
35,853	42,492	353,117	155,753	34,248	706,676	243,765	656	39,175	1,645,595
2,170	12,870	149,713	.....	.....	7,471	2,128	.....	23,755	222,174
.....	10,155	.....	.....	.....	45,892	12,277	.....	99	69,710
2,480	45,314	.....	208,047	.....	315,849	101,978	.....	18,354	703,222
.....	.....	.....	.....	.....	11,049	3,000	.....	669	14,718
4,650	68,339	149,713	208,047	.....	380,261	119,383	.....	42,877	1,009,824
7,948	62,881	147,330	148,104	.....	366,877	127,548	.....	26,192	932,967
.....	1,400	.....	.....	.....	29,134	1,400	.....	1,481	34,132
.....	2,240	.....	.....	.....	2,675	.....	.....	.....	4,915
21,400	17,913	.....	186,005	35,000	191,651	95,287	.....	5,940	563,348
.....	.....	.....	.....	.....	18,500	19,607	.....	.....	38,107
21,400	21,553	.....	186,005	35,000	241,960	116,294	.....	7,421	640,502
23,500	23,711	.....	145,072	30,000	248,253	87,338	.....	4,496	572,239
65,500	5,821	8,788	.....	.....	.....	3,932	3,323	515	94,393
.....	.....	4,032	.....	.....	.....	5,350	.....	317	19,905
4,000	733	.....	.....	.....	.....	1,000	.....	280	7,203
1,500	2,281	.....	.....	.....	18,790	700	.....	1,517	25,054
50,700	66,536	.....	245,728	137,838	381,784	50,305	.....	2,868	935,759
.....	17,230	.....	95,531	19,646	23,353	6,250	.....	.....	163,130
.....	.....	.....	.....	.....	58,428	14,590	.....	259	73,277
121,700	92,601	12,820	341,259	157,484	482,355	82,127	3,323	5,756	1,318,721
142,700	91,184	12,820	343,370	163,207	445,128	87,896	3,323	3,739	1,312,013
.....	355	.....	.....	.....	7,288	2,247	1,000	1,275	21,307
.....	.....	.....	.....	.....	.....	.....	.....	262	2,376
.....	9,641	.....	.....	.....	37,471	.....	.....	513	55,025
.....	.....	.....	.....	.....	61,000	.....	.....	50	61,050
.....	9,996	.....	.....	.....	105,759	2,247	1,000	2,100	139,758
500	11,268	.....	.....	.....	115,811	1,730	1,000	1,921	156,489
2,230	4,617	1,667	.....	.....	.....	.....	.....	348	16,415
.....	8,345	.....	57,705	.....	24,146	264	.....	2,620	96,319
.....	.....	.....	22,019	7,985	13,723	1,787	.....	200	46,516
61,320	13,000	.....	40,000	.....	829,150	19,798	.....	9,690	973,024
.....	.....	.....	.....	.....	1,000	2,600	.....	2,003	5,603
63,550	25,962	1,667	119,724	7,985	868,019	24,449	.....	14,861	1,137,877
63,811	26,949	1,819	111,155	8,675	845,386	44,925	.....	11,602	1,129,555

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.	Borrowed on debentures for schools.
Manitoulin :	$	$	$	$	$	$	$	$	$
Townships	3,006	16,444	168	16	.....	15	12	300	.....
Towns	4,163	5,976	614	96	.....	.....	.....	.....	.....
Totals :									
1903	7,169	22,420	782	112	.....	15	12	300	.....
1902	5,180	19,775	615	91	.....	24	408	50	.....
Middlesex ;									
Townships	89,888	249,506	1,066	151	.....	928	.....	21,791	3,500
Villages	601	18,475	1,086	340	.....	225	.....	5,114	.....
Towns	760	29,903	969	534	.....	1,466	3,661	27,788	.....
City	4,580	447,241	6,106	24,339	99,254	13,824	270,923	355,000	.....
County	728	.....	327	19	.....	1,909	24	4,642	.....
Totals :									
1903	96,557	745,125	9,554	25,383	99,254	18,352	274,608	414,335	3,500
1902	86,267	714,700	9,628	24,666	97,148	27,150	284,684	414,970	1,475
Muskoka:									
Townships	6,753	39,513	438	93	.....	60	816	1,815	3,625
Village	697	1,623	51	50	.....	.....	.....	300	.....
Towns	1,140	41,092	1,369	1,039	20,446	98	602	33,700	.....
Totals :									
1903	8,590	82,228	1,858	1,182	20,446	158	1,418	35,815	3,625
1902	8,446	79,630	1,653	1,271	12,809	61	1,698	32,000	1,900
Nipissing :									
Townships	2,502	27,494	986	103	.....	.....	.....	10,867	.....
Towns	4,304	63,393	4,888	1,504	17,929	125	.....	29,256	.....
Totals :									
1903	6,806	90,887	5,874	1,607	17,929	125	.....	40,123	.....
1902	7,526	83,550	4,202	2,463	13,923	149	.....	46,476	.....
Norfolk :									
Townships	10,824	88,774	265	183	.....	561	.....	6,625	.....
Villages	3,481	18,925	613	194	.....	27	.....	7,515	.....
Town	.....	23,562	799	159	.....	.....	.....	4,039	.....
County	9,389	.....	134	155	.....	89	.....	.....	.....
Totals :									
1903	23,694	131,261	1,811	691	.....	677	.....	18,179	.....
1902	17,083	133,797	1,609	594	.....	727	.....	8,439	.....
Northumberland & Durham : N.	8,128	100,266	508	267	.....	113	100	15,411	.....
Townships .. D.	5,325	83,757	640	128	.....	1,592	.....	4,323	.....
Villages .... N.	2,921	30,380	1,176	554	5,346	78	231	10,468	.....
D.	2,023	5,783	694	141	.....	.....	.....	900	.....
Towns..... N.	363	36,598	2,148	4,807	.....	.....	.....	22,713	4,280
D.	900	61,595	2,768	2,174	4,072	1,053	710	86,713	.....
United Counties..	8,206	.....	685	7	.....	402	.....	14,000	.....
Totals :									
1903	27,866	318,379	8,619	8,078	9,418	3,238	1,041	154,528	4,280
1902	39,730	297,873	8,773	9,597	7,582	3,958	1,510	133,431	19,400
Ontario :									
Townships	6,222	135,156	1,072	179	.....	2,278	1,551	39,030	2,150
Villages	1,764	18,898	528	438	.....	407	.....	8,909	.....
Towns	1,244	58,772	2,174	1,124	.....	348	2,316	95,537	.....
County	22,786	.....	368	62	.....	.....	.....	93,000	.....
Totals :									
1903	32,016	212,826	4,142	1,803	.....	3,033	3,867	236,476	2,150
1902	21,415	196,299	4,072	1,767	.....	3,052	4,509	186,974	.....

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Receipts.—*Continued.*						Disbursements.					
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Roads, streets, bridges and parks.	Waterworks and electric light construction.
$	$	$	$	$	$	$	$	$	$	$	$
.....	.....	.....	.....	49	20,010	1,822	.....	33	473	2,414	.....
.....	.....	.....	.....	18	10,867	798	332	14	263	1,049	.....
.....	.....	.....	.....	67	30,877	2,620	332	47	736	3,463	.....
.....	500	.....	.....	6	26,649	1,969	97	54	787	2,566	.....
4,309	.....	35	1,407	3,975	376,556	12,900	.....	1,405	3,868	79,363	.....
.....	4,886	9	.....	588	31,324	972	1,505	68	573	7,072	.....
.....	72,776	504	.....	236	138,597	1,359	4,325	444	1,069	12,833	47,189
.....	128,053	263	.....	5,218	1,354,801	15,468	85,187	1,901	18,484	112,884	54,732
.....	74,500	495	.....	104,994	187,638	4,961	.....	38	1,854	23,112	.....
4,309	280,215	1,306	1,407	115,011	2,088,916	35,660	91,017	3,856	25,848	235,264	101,921
388	189,711	1,447	40	102,763	1,955,037	39,771	107,519	4,345	27,252	187,044	14,792
.....	.....	5	.....	2,367	55,485	4,442	.....	358	1,373	12,890	.....
.....	.....	.....	.....	45	2,766	121	.....	.....	118	479	.....
.....	56,000	510	.....	1,767	157,763	2,795	12,639	686	3,000	10,461	31,944
.....	56,000	515	.....	4,179	216,014	7,358	12,639	1,044	4,491	23,830	31,944
.....	34,000	1,274	.....	4,528	179,270	8,529	10,257	2,606	3,809	18,038	27,479
.....	.....	.....	.....	1,368	43,320	4,144	.....	298	1,139	5,890	.....
.....	42,557	310	.....	1,478	165,744	4,452	24,405	4,060	2,369	13,340	29,281
.....	42,557	310	.....	2,846	209,064	8,596	24,405	4,358	3,508	19,230	29,281
.....	4,216	.....	.....	2,073	164,578	7,177	20,357	695	3,437	12,853	6,674
900	.....	.....	.....	1,001	109,133	5,300	.....	383	1,941	19,581	.....
.....	.....	.....	25	456	31,236	996	937	4	636	6,581	.....
.....	.....	.....	.....	211	28,770	878	3,995	141	786	3,728	.....
.....	.....	.....	.....	24,014	33,781	2,032	.....	.....	1,644	1,628	.....
900	.....	.....	25	25,682	202,920	9,206	4,932	528	5,007	31,518	.....
.....	2,000	65	.....	28,238	192,552	9,633	4,996	468	3,701	21,391	.....
.....	.....	.....	768	856	126,417	6,027	.....	1,028	2,041	26,989	.....
.....	.....	.....	77	922	96,764	4,520	.....	790	1,791	15,714	.....
.....	12,000	.....	34	1,874	65,062	1,570	6,311	400	1,084	1,607	401
.....	.....	.....	.....	218	9,759	525	684	40	317	1,884	.....
.....	1,609	.....	.....	1,005	73,523	2,672	5,214	176	601	6,032	1,318
.....	12,500	.....	200	14,407	187,092	4,661	9,833	484	1,339	7,897	5,996
.....	.....	.....	.....	51,329	74,629	5,579	.....	119	4,644	10,470	.....
.....	26,109	.....	1,079	70,611	633,246	25,554	22,042	3,037	11,817	73,593	7,715
.....	37,961	688	420	57,293	618,216	24,631	20,938	2,956	13,758	63,583	28,731
.....	.....	.....	25	3,839	191,502	9,124	.....	172	3,097	43,899	.....
.....	.....	.....	.....	96	31,040	1,215	1,538	96	604	3,313	.....
.....	3,000	50	.....	3,137	167,702	3,147	6,890	1,249	2,252	19,532	261
.....	.....	.....	.....	44,421	160,637	2,880	.....	17	3,309	5,194	.....
.....	3,000	50	25	51,493	550,881	16,366	8,428	1,534	9,262	71,938	261
.....	27,154	501	.....	37,367	483,110	15,683	7,660	888	8,680	49,792	2,324

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Disbursements.—*Continued.* Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Drainage work.	Sinking Fund, investments and deposits.	Other investments and deposits.
Manitoulin :	$	$	$	$	$	$	$	$	$
Townships	775	61	202	.....	.....	8,495	.....	.....	600
Towns	89	16	95	281	.....	3,057	.....	270	600
Totals :									
1903	864	77	297	281	.....	11,552	.....	270	1,200
1902	549	320	116	360	.....	10,029	.....	135	100
Middlesex :									
Townships	406	568	1,394	.....	69,938	87,043	6,857	.....	.....
Villages	.....	236	84	297	1,270	6,770	.....	483	.....
Towns	.....	516	134	768	1,909	9,103	.....	1,397	16,706
City	8,595	4,100	28,017	46,772	.....	121,028	.....	165,157	129,237
County	.....	.....	12,225	25,415	.....	14,787	.....	10,005	.....
Totals :									
1903	9,001	5,420	41,854	73,252	73,117	238,731	6,857	177,042	145,943
1902	5,342	6,943	45,103	71,528	70,756	205,892	4,577	221,718	44,681
Muskoka :									
Townships	.....	370	630	.....	.....	23,143	.....	231	.....
Village	.....	25	15	3	.....	593	.....	.....	.....
Towns	1,730	76	828	1,611	.....	12,625	.....	1,159	15,500
Totals :									
1903	1,730	471	1,473	1,614	.....	36,361	.....	1,390	15,500
1902	1,766	2,036	898	1,681	.....	32,258	.....	1,179	585
Nipissing :									
Townships	465	1,267	134	.....	.....	13,831	163	.....	.....
Towns	397	731	1,408	2,444	.....	23,052	.....	.....	.....
Totals :									
1903	862	1,998	1,542	2,444	.....	36,883	163	.....	.....
1902	6,046	4,832	448	1,994	.....	33,522	87	.....	.....
Norfolk :									
Townships	520	167	432	.....	16,109	38,416	1,899	.....	.....
Villages	264	181	93	83	1,455	8,047	.....	.....	.....
Town	165	82	352	999	1,463	6,374	.....	.....	.....
County	.....	.....	4,215	6,639	.....	8,718	.....	.....	.....
Totals :									
1903	949	430	5,092	7,721	19,027	61,555	1,899	.....	.....
1902	8,733	2,007	4,260	7,788	20,174	55,842	553	.....	.....
Northumberland & Durham : Townships	N. 268	487	1,389	.....	14,292	45,506	.....	.....	25
	D. 100	1,096	1,983	.....	17,870	38,722	.....	.....	.....
Villages	N. 860	45	448	598	3,223	12,336	.....	.....	1,240
	D.	84	87	106	280	3,112	.....	.....	.....
Towns	N. 295	189	482	1,611	.....	14,336	.....	200	.....
	D. 8,636	158	906	1,931	3,284	15,761	.....	959	1,100
United Counties	.....	.....	506	17,522	.....	16,005	.....	2,315	.....
Totals :									
1903	10,159	2,059	5,801	21,768	38,949	145,778	.....	3,474	2,365
1902	5,707	1,735	6,095	22,633	42,468	152,779	.....	3,867	6,190
Ontario :									
Townships	690	508	2,127	.....	24,611	54,676	435	1,382	.....
Villages	15	14	207	183	1,561	5,226	.....	364	.....
Towns	1,345	152	1,268	1,821	4,289	21,255	.....	1,597	500
County	6,638	.....	5,375	7,532	.....	10,602	.....	.....	.....
Totals :									
1903	8,688	674	8,977	9,536	30,461	91,759	435	3,343	500
1902	22,619	618	5,590	8,648	29,440	85,730	24	2,878	500

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Disbursements.—*Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.
$	$	$	$	$	$	$	$	$	$	$
224	.....	235	.....	268	.....	358	15,960	4,050	5,571	.....
135	.....	399	.....	418	.....	252	8,068	2,799	923	1,768
359	.....	634	.....	686	.....	610	24,028	6,849	6,494	1,768
172	.....	400	235	391	.....	1,200	19,480	7,169	8,374	1,510
2,606	4,736	.....	23,052	1,871	3	3,615	299,625	76,931	42,144	.....
731	.....	738	7,576	1,602	.....	624	30,601	723	1,212	5,292
.....	.....	3,664	25,930	5,282	1,785	1,511	135,924	2,673	1,474	7,450
.....	.....	49,451	355,000	118,868	.....	15,874	1,330,755	24,046	37,677	360,558
.....	.....	74,500	.....	18,618	.....	2,123	187,638	.....	.....	67,665
3,337	4,736	128,353	411,558	146,241	1,788	23,747	1,984,543	104,373	82,507	440,965
7,606	5,727	151,859	464,706	147,729	.....	23,590	1,858,480	96,557	87,273	367,141
1,760	.....	.....	1,304	433	.....	661	47,595	7,890	23,026	1,245
51	.....	.....	300	83	.....	158	1,946	820	149	.....
1,407	.....	5,640	40,000	10,480	2,196	1,934	156,711	1,052	9,438	1,691
3,218	.....	5,640	41,604	10,996	2,196	2,753	206,252	9,762	32,613	2,936
3,381	.....	3,581	41,325	8,162	244	2,866	170,680	8,590	27,329	4,118
1,095	.....	116	10,447	859	.....	634	40,482	2,838	17,875	.....
800	.....	5,982	33,175	11,727	.....	3,142	160,765	4,979	40,310	.....
1,895	.....	6,098	43,622	12,586	.....	3,776	201,247	7,817	58,185	.....
1,778	.....	5,542	38,447	11,137	.....	2,746	157,772	6,806	48,941	.....
300	994	4,035	6,362	1,551	.....	1,184	99,174	9,959	12,503	.....
197	.....	775	7,109	457	.....	929	28,744	2,492	1,752	.....
405	.....	1,868	1,730	3,995	.....	1,809	28,770	.....	2,934	.....
.....	.....	.....	.....	29	.....	1,192	26,097	7,684	.....	.....
902	994	6,678	15,201	6,032	.....	5,114	182,785	20,135	17,189	.....
2,163	534	7,298	7,799	6,192	.....	5,326	168,858	23,694	12,362	.....
159	.....	.....	12,624	368	.....	2,550	113,753	12,664	7,650	.....
991	.....	1,099	4,711	695	.....	1,110	91,192	5,572	8,394	.....
1,056	.....	2,409	10,998	3,344	.....	13,060	63,990	1,072	420	.....
503	.....	.....	900	228	.....	567	9,317	412	1,988	.....
.....	.....	5,757	22,563	11,024	61	523	73,054	469	8,710	800
212	.....	5,596	98,249	16,778	.....	2,872	186,652	440	14,050	8,122
.....	.....	.....	6,000	853	.....	2,364	66,377	8,252	.....	12,898
2,921	.....	14,861	156,045	33,290	61	23,046	604,335	28,911	41,212	21,820
2,714	.....	12,685	136,250	34,109	70	8,471	590,350	27,866	40,008	18,346
1,118	.....	3,318	34,436	3,044	.....	2,298	184,935	6,567	6,330	10,493
.....	.....	2,096	11,087	1,943	.....	294	29,756	1,284	2,252	3,549
.....	.....	5,641	81,060	9,707	.....	5,096	167,062	640	16,224	11,536
.....	.....	2,179	93,000	2,212	.....	635	139,573	21,064	.....	.....
1,118	.....	13,234	219,583	16,906	.....	8,323	521,326	29,555	24,806	25,578
1,100	169	11,711	174,843	15,700	62	6,435	451,094	32,016	26,935	21,235

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets, December 31.—*Continued.*					Liabilities,	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
	$	$	$	$	$	$	$
Manitoulin :							
Townships	600		2,065	103	12,389		4,024
Towns	700		5,200	48	11,438		2,125
Totals :							
1903	1,300		7,265	151	23,827		6,149
1902	100		6,585	1,302	25,040		4,802
Middlesex :							
Townships	6,400		13,970	17,228	156,673	64,336	614
Villages	108		14,092	27	21,454	924	223
Towns	19,706	47,189	25,482	5,000	108,974	495	1,207
City	1,028,605	860,504	555,250	37,382	2,904,022		354
County	22,800		86,000	78,315	254,780		
Totals :							
1903	1,077,619	907,693	694,794	137,952	3,445,903	65,755	2,398
1902	1,104,066	898,136	697,455	135,607	3,386,235	68,285	5,421
Muskoka :							
Townships			7,921	6,713	46,795		9,796
Village			30		999		257
Towns	16,500	164,191	40,498	5,015	238,385		5,916
Totals :							
1903	16,500	164,191	48,449	11,728	286,179		15,969
1902	855	140,650	42,619	18,478	242,639		16,957
Nipissing :							
Townships			1,864	8,608	31,185		7,981
Towns		153,538	22,315	14,899	236,041		15,817
Totals :							
1903		153,538	24,179	23,507	267,226		23,798
1902		130,378	23,472	19,349	228,946		22,878
Norfolk :							
Townships	8,764		13,485	6,326	51,037	1,305	4,368
Villages			8,600	143	12,987		3,124
Town			26,270		29,204		
County			59,000	1,305	67,989		
Totals :							
1903	8,764		107,355	7,774	161,217	1,305	7,492
1902	8,764		106,583	8,061	159,464	514	6,340
Northumberland and Durham :							
Townships N.	88		21,835	1,407	43,644	4,687	28
Townships D.	30,840		15,700	4,933	65,439		
Villages N.	1,240	34,140	25,290	5,859	68,021	1,400	
Villages D.			10,570	998	13,998	272	810
Towns N.			153,000	445	163,424	1,962	
Towns D.	27,794	82,154	225,329	36,970	394,859		
United Counties			51,000	9,231	81,381		
Totals :							
1903	59,962	116,294	502,724	59,843	830,766	8,321	838
1902	58,638	114,820	492,706	59,597	811,981	3,419	2,910
Ontario :							
Townships	57,961		16,370	9,266	106,987	150	1,101
Villages			22,930	8,450	38,465		962
Towns	47,259	14,000	60,400	21,795	171,854		
County			78,000	630	99,694		
Totals .							
1903	105,220	14,000	177,700	40,141	417,000	150	2,063
1902	109,587	14,000	167,650	25,172	396,595	977	1,223

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

December 31.

Railway debentures.	School debentures.	Drainage debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
.....	895	.....	.....	.....	1,865	300	.....	223	7,307
.....	2,084	.....	.....	.....	2,780	.....	.....	167	7,156
.....	2,979	.....	.....	.....	4,645	300	.....	390	14,463
.....	3,338	.....	.....	.....	5,279	.....	.....	1,468	14,887
.....	13,341	13,300	.....	.....	.....	6,008	.....	4,274	101,873
.....	12,527	.....	.....	.....	19,345	3,297	.....	16	36,332
.....	8,000	.....	59,109	.....	51,537	8,227	611	762	129,948
325,000	100,100	.....	809,629	.....	1,816,976	15,000	.....	78,483	3,145,542
.....	.....	.....	.....	.....	486,260	4,642	.....	8,770	499,672
325,000	133,968	13,300	868,738	.....	2,874,118	37,174	611	92,305	3,913,367
325,000	133,805	13,727	949,629	.....	2,141,365	34,564	436	91,404	3,763,636
.....	7,904	.....	.....	.....	.....	1,700	.....	2,495	21,895
.....	1,501	.....	.....	.....	.....	.....	.....	495	2,253
.....	13,128	.....	64,625	55,090	79,542	9,100	100	862	228,363
.....	22,533	.....	64,625	55,090	79,542	10,800	100	3,852	252,511
.....	22,126	.....	54,866	69,779	24,252	18,280	1,009	5,595	212,864
.....	7,321	.....	.....	.....	2,383	4,052	.....	2,024	23,761
.....	16,209	.....	79,639	13,777	96,020	19,207	.....	7,972	248,641
.....	23,530	.....	79,639	13,777	98,403	23,259	.....	9,996	272,402
.....	25,425	.....	81,819	14,650	58,891	26,463	.....	12,162	242,288
19,057	1,765	3,224	.....	.....	.....	869	.....	.....	30,588
.....	6,492	.....	.....	.....	5,155	450	.....	1,758	16,979
10,000	18,129	.....	.....	.....	43,886	4,039	.....	935	76,989
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29,057	26,386	3,224	.....	.....	49,041	5,358	.....	2,693	124,556
33,092	27,288	3,318	.....	.....	51,684	2,380	.....	4,856	129,472
.....	298	.....	.....	.....	.....	4,400	.....	1,488	10,901
4,657	3,621	.....	.....	.....	6,987	1,907	.....	1,554	18,726
.....	6,728	.....	10,575	18,265	15,765	1,200	.....	204	54,137
.....	3,496	.....	.....	.....	.....	.....	.....	149	4,727
.....	24,280	.....	.....	.....	221,759	11,350	800	992	261,143
.....	8,563	.....	47,075	.....	298,877	10,498	.....	3,438	368,451
.....	.....	.....	.....	.....	20,000	8,000	.....	558	28,558
4,657	46,986	.....	57,650	18,265	563,388	37,355	800	8,383	746,643
4,832	45,627	.....	56,596	19,421	551,863	39,009	600	7,429	731,706
24,000	8,072	585	.....	.....	2,000	9,723	.....	975	46,606
.....	.....	.....	.....	.....	33,612	1,452	1,170	65	40,261
9,000	15,000	.....	.....	.....	159,879	32,560	1,297	987	218,723
.....	.....	.....	.....	.....	28,076	24,140	.....	548	52,764
33,000	23,072	585	.....	.....	223,567	70,875	2,467	2,575	358,354
34,000	22,040	585	.....	.....	232,801	53,928	2,467	3,276	351,297

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.	Borrowed on debentures for schools.
	$	$	$	$	$	$	$	$	$
Oxford :									
Townships	38,349	171,361	676	2,956	.....	1,182	5,633	13,536	.....
Villages	4,220	12,059	459	111	.....	76	1,510	5,900	.....
Towns	2,697	59,128	2,596	1,491	.....	4,030	6,394	49,045	.....
City	120	76,413	3,091	2,626	32,249	7,547	6,510	138,721	.....
County	49,694	.....	560	30	.....	1,106	.....	.....	.....
Totals :									
1903	95,080	318,961	7,382	7,214	32,249	13,941	20,047	207,202	.....
1902	91,078	301,999	7,129	7,831	26,784	12,726	20,149	103,058	.....
Parry Sound :									
Townships	12,305	35,453	906	75	.....	28	.....	1,604	.....
Villages	2,775	6,429	164	167	.....	59	665	173	.....
Towns	132	17,075	983	332	8,775	2,877	3,233	5,925	.....
Totals :									
1903	15,212	58,957	2,053	574	8,775	2,964	3,898	7,702	.....
1902	14,811	52,337	1,997	632	6,905	328	2,293	7,728	5,500
Peel :									
Townships	2,223	79,661	872	84	.....	3,011	18,361	11,737	.....
Villages	1,140	5,120	294	47	.....	.....	.....	4,295	.....
Town	469	24,182	567	236	3,759	266	755	10,600	.....
County	2,419	.....	180	52	.....	.....	.....	20,000	.....
Totals ;									
1903	6,251	108,963	1,913	419	3,759	3,277	19,116	46,632	.....
1902	4,644	102,190	2,182	341	3,693	2,559	18,732	36,894	.....
Perth :									
Townships	39,023	187,122	1,080	22	.....	736	9,721	41,462	4,640
Villages	.....	2,913	195	36	.....	.....	.....	1,200	.....
Towns	385	67,432	2,595	737	8,418	1,551	6,064	146,677	2,500
City	1,522	112,834	3,351	1,217	12,817	5,789	.....	147,913	.....
County	19,599	.....	726	58	.....	1,581	.....	16,500	.....
Totals :									
1903	60,529	370,301	7,947	2,070	21,235	9,657	15,785	353,752	7,140
1902	53,774	345,501	8,033	2,452	7,998	6,609	3,057	228,025	3,290
Peterborough :									
Townships	10,583	78,449	196	33	.....	140	.....	7,647	.....
Villages	994	24,079	1,304	654	790	611	314	8,075	1,502
Towns	.....	93,216	5,031	3,689	25,390	1,075	1,458	5,846	.....
County	.....	.....	321	160	.....	400	499	12,093	.....
Totals :									
1903	11,577	195,744	6,852	4,536	26,180	2,226	2,271	33,661	1,502
1902	10,597	184,210	6,991	4,164	23,726	8,183	2,250	276,870	5,998
Prescott & Russell :									
Townships.. P.	5,950	62,723	1,126	59	.....	.....	.....	3,309	.....
Townships.. R.	16,254	55,330	798	2	.....	57	.....	11,269	550
Villages .... P.	227	2,200	165	46	.....	.....	.....	.....	.....
Villages .... R.	499	5,273	213	22	.....	110	.....	100	.....
Town .....P.	946	17,820	2,020	314	.....	.....	1,370	6,536	.....
United Counties	.....	.....	248	132	.....	275	.....	4,519	.....
Totals :									
1903	23,876	143,346	4,570	575	.....	442	1,370	25,733	550
1902	18,485	150,128	4,778	282	.....	1,346	1,462	20,232	6,687

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Receipts.—*Continued.*						Disbursements.					
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts:	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Roads, streets, bridges and parks.	Waterworks and electric light construction.
$	$	$	$	$	$	$	$	$	$	$	$
14,680	.....	61	368	1,918	250,720	8,092	.....	855	2,087	52,661	.....
.....	4,667	38	.....	1,424	30,464	574	1,539	160	445	5,591	.....
.....	26,652	.....	.....	507	152,540	2,675	8,726	65	1,490	9,551	.....
.....	26,149	.....	.....	2,149	295,575	3,343	35,604	213	1,570	37,193	21,137
.....	.....	.....	.....	40,196	91,586	4,704	.....	.....	2,074	4,383	.....
14,680	57,468	99	368	46,194	820,885	19,388	45,869	1,293	7,666	109,379	21,137
6,269	54,881	141	53	60,394	692,492	19,014	43,842	2,121	7,511	86,722	14,991
.....	.....	.....	.....	1,333	51,704	4,856	.....	229	1,422	5,373	.....
.....	1,471	.....	.....	1,074	12,977	388	726	19	354	685	.....
.....	33,000	.....	.....	178	72,510	891	4,168	375	1,354	7,422	6,294
.....	34,471	.....	.....	2,585	137,191	6,135	4,894	623	3,130	13,480	6,294
.....	4,758	32	.....	1,733	99,054	6,080	4,735	424	2,366	6,645	6,819
.....	.....	.....	135	795	116,879	4,662	.....	1,304	1,443	18,256	.....
.....	5,000	100	.....	118	16,114	472	166	.....	203	4,628	.....
.....	5,316	315	.....	144	46,609	954	2,183	30	795	7,763	1,336
.....	6,000	.....	.....	23,443	52,094	1,812	.....	92	1,562	7,287	.....
.....	16,316	415	135	24,500	231,696	7,900	2,349	1,426	4,003	37,934	1,336
.....	9,872	534	.....	25,966	207,607	7,831	2,099	1,771	3,778	22,065	75
3,075	.....	18	3,970	2,729	293,598	9,067	.....	1,168	2,165	59,241	.....
.....	.....	.....	44	.....	4,388	182	165	6	184	747	.....
.....	31,390	40	184	1,336	269,309	2,011	16,174	764	1,899	23,964	23,371
.....	21,667	.....	.....	1,520	308,630	3,158	26,296	848	3,853	34,772	109,397
.....	.....	.....	.....	40,650	79,114	2,259	.....	10	1,719	1,787	.....
3,075	53,057	58	4,198	46,235	955,039	16,677	42,635	2,796	9,820	120,511	132,768
18,802	30,961	596	5,192	71,792	786,082	16,732	27,738	7,717	8,866	62,948	11,153
.....	.....	.....	213	1,199	98,460	4,872	.....	139	1,336	15,505	.....
.....	.....	.....	.....	156	38,479	1,593	3,343	22	711	3,260	264
.....	17,787	.....	.....	748	154,240	2,488	26,080	691	3,290	24,085	12,870
.....	10,000	.....	.....	32,788	56,261	2,911	.....	.....	1,413	8,539	.....
.....	27,787	.....	213	34,891	347,440	11,864	29,423	852	6,750	51,389	13,134
.....	251,278	.....	655	42,859	817,781	12,724	27,339	1,227	7,129	37,275	244,861
.....	.....	.....	.....	1,350	74,517	3,287	.....	1,900	921	8,395	.....
5,390	.....	74	253	2,995	92,972	4,275	.....	396	990	12,665	.....
.....	.....	.....	.....	.....	2,638	190	19	.....	9	765	.....
.....	.....	.....	.....	50	6,267	522	7	77	145	469	.....
.....	1,315	.....	.....	448	30,769	805	471	23	625	4,472	.....
.....	.....	.....	.....	23,357	28,531	2,310	.....	.....	887	5,542	.....
5,390	1,315	74	253	28,200	235,694	11,389	497	2,396	3,577	32,308	.....
25,758	10,667	1,235	.....	27,504	268,564	10,104	1,095	1,261	4,566	25,764	.....

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Disbursements.—*Continued.*

Counties and Districts.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County treasurer for levies.	Payment on account of schools and education.	Drainage work.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	7	$	$	$	$	$
Oxford :									
Townships	200	1,297	514	.....	33,248	55,506	15,404	5,500	.....
Villages	.....	10	40	328	858	3,018	.....	1,276	24
Towns	100	177	277	2,157	.....	14,444	.....	10,970	3,859
City	.....	1,101	901	3,320	.....	19,837	.....	24,870	4,755
County	1,378	.....	5,174	8,432	.....	8,699	.....	.....	.....
Totals :									
1903	1,678	2,585	6,906	14,237	34,106	101,504	15,404	42,616	8,638
1902	1,766	2,277	6,884	13,765	42,356	98,561	13,342	44,669	9,673
Parry Sound :									
Townships	908	210	420	.....	.....	22,131	.....	.....	.....
Villages	23	40	14	57	.....	2,500	.....	79	1,644
Towns	.....	1,332	231	525	.....	5,750	.....	.....	10,603
Totals :									
1903	931	1,582	665	582	.....	30,381	.....	79	12,247
1902	613	3,973	709	467	.....	28,111	77	255	4,014
Peel :									
Townships	....	309	369	.....	16,722	33,760	.....	.....	18,822
Villages	.....	32	35	90	281	2,142	.....	.....	1,856
Town	.....	84	133	580	997	7,925	.....	.....	.....
County	4,237	.....	2,706	5,355	.....	6,006	....	.....	.....
Totals :									
1903	4,237	425	3,243	6,025	18,000	49,833	.....	.....	20,678
1902	599	1,102	2,675	6,628	18,798	46,426	.....	19,101	251
Perth :									
Townships	250	2,179	914	.....	37,404	57,870	14,969	6,718	.....
Villages	.....	.....	.....	34	194	900	.....	.....	.....
Towns	3,775	258	969	2,091	1,751	18,868	.....	8,089	28,500
City	.....	1,580	982	4,974	.....	23,250	.....	17,140	.....
County	730	.....	6,978	8,661	.....	9,448	.....	9,761	.....
Totals :									
1903	4,755	4,017	9,843	15,760	39,349	110,336	14,969	41,708	28,500
1902	784	1,724	9,914	16,378	40,211	103,507	14,796	30,463	4,135
Peterborough :									
Townships	485	1,448	1,231	.....	22,288	32,232	1,086	.....	254
Villages	241	363	320	446	2,935	9,430	.....	2,032	.....
Towns	2,694	720	2,488	6,802	.....	30,000	.....	2,152	3,475
County	450	.....	100	10,357	.....	4,814	.....	1,502	.....
Totals :									
1903	3,870	2,531	4,139	17,605	25,223	76,476	1,086	5,686	3,729
1902	1,394	2,116	5,678	15,943	22,403	76,773	96	31,951	258
Prescott & Russell :									
Townships.. P.	.....	3,033	101	.....	8,271	30,605	1,187	57	.....
Townships.. R.	407	1,161	231	.....	5,995	23,156	13,628	391	50
Villages .... P.	.....	14	.....	.....	237	1,366	.....	.....	.....
Villages .... R.	.....	250	.....	77	445	1,335	.....	178	.....
Town P.	118	619	9	1,063	1,143	8,846	.....	.....	1,248
United Counties..	14	.....	30	5,696	.....	8,469	.....	.....	.....
Totals :									
1903	539	5,077	371	6,836	16,091	73,777	14,815	626	1,298
1902	3,373	7,597	594	7,808	16,731	85,351	16,388	376	1,370

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Disbursements.—*Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed,	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.
$	$	$	$	$	$	$	$	$	$	$
1,536	10,132	.....	18,450	3,823	.....	1,509	210,814	39,906	3,140	.....
434	.....	1,833	8,278	1,455	.....	138	26,001	4,463	1,665	5,064
.....	.....	3,653	44,529	23,720	36	23,195	149,624	2,916	10,195	60,207
.....	.....	1,968	110,500	24,956	.....	3,947	295,215	360	2,267	205,513
.....	.....	7,409	.....	3,996	.....	711	46,960	44,626	.....	.....
1,970	10,132	14,863	181,757	57,950	36	29,500	728,614	92,271	17,267	270,784
1,308	10,890	11,973	96,468	50,074	.....	19,205	597,412	95,080	25,680	240,255
1,816	.....	.....	2,151	750	.....	738	41,004	10,700	23,517	.....
285	.....	666	.....	1,663	.....	731	9,874	3,103	1,653	860
364	.....	3,225	5,903	6,561	879	16,578	72,455	55	4,869	.....
2,465	.....	3,891	8,054	8,974	879	18,047	123,333	13,858	30,039	860
2,335	.....	1,622	8,225	4,758	.....	1,614	83,842	15,212	29,598	1,789
700	.....	217	11,880	779	.....	1,613	110,836	6,043	641	60,793
.....	.....	.....	4,500	72	.....	360	14,837	1,277	736	.....
.....	.....	9,495	5,000	7,434	.....	833	45,542	1,067	1,605	.....
.....	.....	.....	20,000	394	.....	2,392	51,843	251	.....	.....
700	.....	9,712	41,380	8,679	.....	5,198	223,058	8,638	2,982	60,793
746	.....	10,816	42,710	9,141	.....	4,744	201,356	6,251	6,775	60,302
2,258	14,211	2,365	44,456	7,885	.....	3,750	266,870	26,728	7,046	.....
.....	.....	255	1,339	232	50	1	4,289	99	3	.....
.....	.....	9,784	108,761	14,159	.....	4,053	269,241	68	3,145	16,278
.....	.....	.....	40,000	25,576	95	13,521	305,442	3,188	39,849	131,417
.....	.....	948	16,500	9,196	.....	4,348	72,345	6,769	.....	44,752
2,258	14,211	13,352	211,056	57,048	145	25,673	918,187	36,852	50,043	192,447
1,548	14,923	12,512	255,098	55,452	.....	28,954	725,553	60,529	40,428	168,873
1,404	.....	137	5,408	709	.....	808	89,342	9,118	16,362	3,166
379	.....	122	8,567	2,885	162	619	37,694	785	658	16,050
.....	.....	250	.....	29,372	.....	6,783	154,240	.....	9,955	61,926
.....	.....	2,247	15,625	5,631	.....	2,672	56,261	.....	.....	11,371
1,783	.....	2,756	29,600	38,597	162	10,882	337,537	9,903	26,975	92,513
1,051	.....	3,659	270,782	26,954	821	15,770	806,204	11,577	26,067	169,836
973	250	1,094	5,515	1,166	.....	1,747	68,502	6,015	21,203	57
802	2,994	1,009	8,194	3,337	43	1,184	80,908	12,064	23,185	2,173
.....	.....	.....	.....	.....	.....	20	2,620	18	1,331	.....
.....	.....	.....	500	237	.....	94	4,336	1,931	5,381	5,96
229	.....	244	7,550	1,311	.....	951	29,727	1,042	7,541	.....
.....	.....	432	.....	715	.....	4,436	28,531	.....	.....	.....
2,004	3,244	2,779	21,759	6,766	43	8,432	214,624	21,070	58,941	2,826
1,942	2,621	4,123	40,404	6,150	.....	7,070	244,688	23,876	50,518	2,200

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets—*Continued.*					Liabilities.	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
	$	$	$	$	$	$	$
Oxford :							
Townships	19,541		8,310	20,468	91,365	2,690	1,699
Villages	24		11,800	2,477	25,493		2,538
Towns	45,144	33,500	56,700	61,289	269,951	3,648	4,124
City	13,798	217,742	73,260	57,139	570,079		
County			190,000	11,700	246,326		179
Totals :							
1903	78,507	251,242	340,070	153,073	1,203,214	6,338	8,540
1902	77,829	245,075	341,360	108,486	1,133,765		7,550
Parry Sound :							
Townships			4,739	11,139	50,095		15,386
Villages	24,977		2,688	2,365	35,646		2,800
Towns	10,637	75,089	8,875	13,259	112,784		
Totals :							
1903	35,614	75,089	16,302	26,763	198,525		18,186
1902	26,257	69,960	14,112	17,021	173,949		17,037
Peel :							
Townships	3,862		7,190	5,017	83,546		
Villages	1,856		2,910	300	7,079		845
Town		120,000	12,975	540	136,187		2,975
County			78,286	556	79,093		
Totals :							
1903	5,718	120,000	101,361	6,413	305,905		3,820
1902	4,647	120,000	99,731	4,391	302,097		5,435
Perth :							
Townships	7,357		4,855	76,405	122,391	7,422	1,249
Villages		200			302		
Towns	47,627	116,471	59,115	3,552	246,256	870	40
City		106,000	117,400	55,214	453,068		
County			125,000	16,738	193,259		
Totals :							
1903	54,984	222,671	306,370	151,909	1,015,276	8,292	1,289
1902	26,556	95,700	283,022	113,223	788,331	5,925	650
Peterborough :							
Townships			7,275	5,075	40,996	8,301	4,013
Villages		10,610	24,081	1,591	53,775	282	
Towns	34,275	235,000	163,600	185,613	690,369		
County			93,355	12,990	117,716		759
Totals :							
1903	34,275	245,610	288,311	205,269	902,856	8,583	4,772
1902	258	247,339	285,263	197,832	938,172	10,050	5,338
Prescott and Russell :							
Townships P.			8,150	9,297	44,722	5,354	10,249
Townships R.	50		7,550	4,789	50,111	6,208	7,525
Villages P.				46	1,395	223	309
Villages R.			3,388		11,296	300	2,970
Town P.	1,248		5,500	50	15,381	688	2,184
United Counties			36,594	12,213	48,807		
Totals :							
1903	1,298		61,182	26,395	171,712	12,773	23,237
1902	1,370		44,617	38,754	161,335	11,420	21,254

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Liabilities, December 31.—*Continued.*

Railway debentures.	School debentures.	Drainage debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
.....	13,007	66,734	.....	.....	.....	2,470	5,091	17,818	109,509
.....	7,010	.....	.....	.....	21,430	1,800	.....	77	32,855
27,115	20,644	.....	.....	.....	268,978	20,660	2,385	2,628	350,182
.....	30,700	.....	147,472	40,000	346,954	27,500	18,622	4,128	615,376
.....	.....	.....	.....	.....	92,506	.....	.....	2,691	95,376
27,115	71,361	66,734	147,472	40,000	729,868	52,430	26,098	27,342	1,203,298
7,540	73,331	62,186	146,154	40,000	708,156	30,949	22,134	26,253	1,124,253
.....	10,097	.....	.....	.....	.....	404	.....	2,068	27,955
.....	5,289	.....	.....	.....	25,796	1,969	1,181	852	37,887
18,889	7,354	.....	36,060	22,664	7,958	5,925	.....	5,000	103,850
18,889	22,740	.....	36,060	22,664	33,754	8,298	1,181	7,920	169,692
.....	25,205	.....	27,248	23,127	30,412	8,823	1,008	8,238	141,098
.....	5,017	.....	.....	.....	2,075	.....	1,653	155	8,900
.....	.....	.....	.....	.....	5,000	.....	.....	204	6,049
.....	.....	.....	.....	.....	139,179	7,600	.....	2,097	151,851
.....	.....	.....	.....	.....	6,000	.....	.....	1,120	7,120
.....	5,017	.....	.....	.....	152,254	7,600	1,653	3,576	173,920
.....	5,717	.....	.....	.....	145,650	3,996	.....	1,840	162,638
50,110	13,120	87,892	.....	.....	.....	11,383	.....	2,043	173,219
.....	.....	.....	.....	.....	4,409	.....	.....	.....	4,409
.....	2,500	.....	41,935	13,428	218,740	46,077	.....	969	324,559
60,000	20,500	.....	.....	.....	449,787	122,913	.....	1,442	654,642
120,000	.....	.....	.....	.....	79,083	.....	.....	6,568	205,651
230,110	36,120	87,892	41,935	13,428	752,019	180,373	.....	11,022	1,362,480
232,475	31,238	99,028	36,971	13,973	714,368	37,039	639	24,727	1,197,033
3,000	7,667	.....	.....	.....	978	2,316	.....	3,084	29,359
.....	13,672	.....	15,000	.....	28,544	1,250	.....	1,421	60,169
.....	61,900	.....	235,000	.....	301,860	24,459	.....	8,402	631,621
.....	.....	.....	.....	.....	58,145	12,154	.....	4,889	75,947
3,000	83,239	.....	250,000	.....	389,527	40,179	.....	17,796	797,096
3,000	83,520	.....	245,000	.....	369,496	26,178	60,105	21,770	824,457
7,421	4,466	1,017	.....	.....	985	5,053	.....	5,372	39,917
10,200	4,330	46,178	.....	.....	10,037	4,000	.....	3,762	92,240
.....	.....	.....	.....	.....	.....	.....	.....	169	701
.....	.....	.....	.....	.....	2,000	1,929	.....	1,384	8,583
6,718	10,217	.....	.....	.....	1,275	4,585	.....	4,034	29,701
.....	.....	.....	.....	.....	6,753	22,276	.....	226	29,255
24,339	19,013	47,195	.....	.....	21,050	37,843	.....	14,947	200,397
25,512	20,467	45,049	.....	.....	21,341	33,854	.....	12,710	191,607

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses	Borrowed on debentures for schools.
	$	$	$	$	$	$	$	$	$
Prince Edward :									
Townships	1,555	45,572	98	88	.....	2,075	2,365	9,780	.....
Village	29	2,627	150	59	.....	.....	57	1,775	.....
Town	260	26,223	1,738	629	9,821	8	1,242	1,059	.....
County	282	.....	95	53	.....	2	.....	1,173	.....
Totals :									
1903	2,126	74,422	2,081	829	9,821	2,085	3,664	13,787	.....
1902	1,325	72,767	2,008	804	8,949	1,770	1,288	5,299	.....
Rainy River :									
Townships	3,170	20,069	1,965	78	.....	.....	.....	9,149	.....
Town	732	48,497	2,087	959	39,093	43	.....	399,400	.....
Totals :									
1903	3,902	68,566	4,052	1,037	39,093	43	.....	408,549	.....
1902	2,207	71,601	2,571	1,019	7,196	234	.....	212,305	3,150
Renfrew :									
Townships	11,511	84,119	1,045	175	.....	169	550	1,287	.....
Villages	492	5,365	477	94	.....	.....	2,259	5,565	.....
Towns	1,854	89,725	4,002	2,353	16,685	454	1,005	68,505	.....
County	3,683	.....	610	56	.....	470	.....	10,000	.....
Totals :									
1903	17,540	179,209	6,134	2,678	16,685	1,093	3,814	85,357	.....
1902	21,512	170,371	6,235	2,062	15,433	1,205	11,762	104,079	1,200
Simcoe :									
Townships	27,402	209,649	1,443	329	.....	400	9,025	14,825	.....
Villages	7,317	17,926	681	413	3,545	24	.....	3,964	.....
Towns	10,074	181,288	7,605	5,733	64,598	3,734	4,963	47,126	.....
County	1,395	.....	505	222	.....	610	.....	40,000	.....
Totals :									
1903	46,188	408,863	10,234	6,697	68,143	4,768	13,988	105,915	.....
1902	50,378	376,485	10,474	5,302	52,456	2,248	28,992	71,523	9,800
Stor., Dun. & Glen.:									
Townships (S.)	5,354	73,024	1,332	19	.....	115	7,104	26,935	2,050
Townships (D.)	59,053	84,134	312	40	.....	1,331	124	35,214	.....
Townships (G.)	2,115	67,262	1,524	50	.....	.....	60	7,366	1,570
Villages (D.)	1,669	30,281	1,266	397	7,184	.....	300	53,562	6,000
Villages (G.)	1,256	3,158	426	19	.....	.....	.....	765	.....
Towns (S.)	.....	53,028	2,785	1,022	9,274	951	24,607	17,364	.....
Towns (G.)	99	9,541	739	86	4,107	.....	.....	31,353	.....
United Counties	.....	.....	1,322	47	.....	.....	.....	92,000	.....
Totals :									
1903	69,546	320,428	9,706	1,680	20,565	2,397	32,195	264,559	9,620
1902	62,645	300,871	9,392	2,202	18,823	2,826	10,531	207,266	4,110
Thunder Bay :									
Townships	1,863	12,098	330	98	.....	98	380	9,746	6,000
Towns	9,764	94,810	6,409	6,387	111,095	4,109	28,202	229,363	.....
Totals :									
1903	11,627	106,908	6,739	6,485	111,095	4,207	28,582	239,109	6,000
1902	4,397	102,973	4,889	5,042	51,324	5,227	3,994	135,713	15,000

INTO COUNTIES AND DISTRICTS FOR THE YEAR 1902 AND 1903.

Receipts.—*Continued.*							Disbursements.				
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law cost.	Other expenses of municipal government.	Roads, streets, bridges and parks.	Waterworks and electric light construction.
$	$	$	$	$	$	$	$	$	$	$	$
.....	.....	.....	1,300	168	63,001	2,403	.....	70	1,203	6,415	.....
.....	.....	.....	.....	35	4,732	152	721	.....	113	311	.....
.....	.....	.....	150	122	41,252	1,201	10,592	133	401	5,469	.....
.....	.....	.....	.....	14,764	16,369	1,061	.....	.....	1,756	1,019	.....
.....	.....	.....	1,450	15,089	125,354	4,817	11,313	203	3,473	13,214	.....
.....	.....	.....	.....	14,870	109,080	4,987	9,303	153	3,628	9,309	629
.....	1,800	.....	.....	1,069	37,300	2,865	.....	189	1,650	7,392	.....
.....	87,118	.....	.....	909	578,838	1,965	17,385	500	1,549	4,650	76,230
.....	88,918	.....	.....	1,978	616,138	4,830	17,385	689	3,199	12,042	76,230
.....	.....	.....	.....	750	301,033	4,120	9,512	1,553	2,944	8,051	6,240
.....	.....	.....	60	10,312	109,228	7,129	.....	224	2,293	10,757	.....
.....	3,000	.....	.....	65	17,317	550	170	174	228	7,781	.....
.....	33,525	322	64	23,558	242,052	3,810	13,283	791	2,787	41,453	11,794
.....	16,500	120	.....	26,830	58,269	3,112	.....	513	2,105	27,782	.....
.....	53,025	442	124	60,765	426,866	14,601	13,453	1,702	7,413	87,773	11,794
217	65,205	191	598	28,935	429,005	14,622	14,330	569	6,090	45,284	25,844
3,195	700	220	278	2,586	270,052	14,516	.....	906	4,275	37,827	.....
.....	.....	.....	215	239	34,324	1,743	4,150	222	860	3,896	5,734
.....	177,635	1,550	100	13,325	517,731	9,266	48,157	1,169	10,919	72,478	68,613
.....	100,000	250	.....	70,112	213,094	6,124	.....	936	3,582	6,741	.....
3,195	278,335	2,020	593	86,262	1,035,201	31,649	52,307	3,233	19,636	120,942	74,347
5,555	93,400	888	2,775	79,911	790,187	30,475	48,698	6,572	12,656	69,324	98,120
7,631	.....	.....	.....	1,537	125,101	3,373	.....	1,499	1,887	8,438	.....
23,455	.....	1,263	.....	23,000	227,926	2,220	.....	715	1,146	16,792	.....
4,587	.....	82	.....	892	85,508	3,497	.....	1,980	1,236	13,712	.....
.....	24,740	.....	.....	677	126,076	1,181	4,631	148	848	7,086	9,128
.....	.....	.....	.....	136	5,760	210	89	3	251	1,195	.....
.....	20,055	103	.....	175	129,364	1,570	8,299	642	2,319	3,230	3,994
.....	.....	.....	.....	70	45,995	637	5,512	407	451	1,609	1,643
.....	145	.....	.....	45,855	139,369	3,591	.....	468	4,825	6,293	.....
35,673	44,940	1,448	.....	72,342	885,099	16,279	18,531	5,862	12,963	58,355	14,765
56,680	50,155	1,374	779	53,178	780,832	14,101	18,517	6,051	9,812	66,318	39,545
.....	.....	.....	.....	386	30,999	2,130	.....	332	1,030	4,142	.....
.....	15,000	274	.....	32,589	538,002	5,132	26,518	1,781	8,885	27,995	117,575
.....	15,000	274	.....	32,975	569,001	7,262	26,518	2,113	9,915	32,137	117,575
....	149,500	.....	.....	8,463	486,522	5,850	26,361	828	5,264	26,211	19,759

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Disbursements.—*Continued.*								
	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$	$	$
Prince Edward:									
Townships	73	2,010	1,804	.....	10,533	26,556	31	1,491	2,505
Village	.....	.....	20	.....	179	740	.....	.....	.....
Town	2,023	1,540	398	1,079	1,089	8,440	.....	.....	1,402
County	470	.....	189	4,822	.....	5,360	.....	.....	.....
Totals:									
1903	2,566	3,550	2,411	5,901	11,801	41,096	31	1,491	3,907
1902	1,899	362	3,231	5,319	11,797	41,206	.....	504	1,552
Rainy River:									
Townships	80	433	184	.....	.....	9,287	.....	.....	.....
Town	600	89	552	1,620	.....	15,726	.....	1,537	.....
Totals:									
1903	680	522	736	1,620	.....	25,013	.....	1,537	.....
1902	687	970	291	1,612	.....	27,261	.....	2,251	.....
Renfrew:									
Townships	588	1,041	566	.....	10,477	46,312	807	113	334
Villages	1,131	6	5	40	642	5,333	.....	.....	.....
Towns	1,431	1,128	441	2,479	4,674	30,697	.....	1,276	25,397
County	442	.....	579	6,039	.....	9,948	.....	1,026	.....
Totals:									
1903	3,592	2,175	1,591	8,558	15,793	92,290	807	2,415	25,731
1902	4,592	7,566	1,998	8,016	17,348	85,627	549	3,317	4,988
Simcoe:									
Townships	.....	2,719	2,177	.....	37,458	91,188	3,720	181	2,853
Villages	360	59	82	67	962	4,210	.....	.....	.....
Towns	31,183	982	2,452	4,149	12,956	58,329	.....	3,200	13,947
County	594	.....	10,634	12,183	.....	17,708	.....	.....	.....
Totals	.....	.....	.....	.....	.....	.....	.....	.....	.....
1903	32,137	3,760	15,345	16,399	51,376	171,435	3,720	3,381	16,800
1902	3,832	2,141	11,703	16,828	52,583	162,575	2,617	2,422	3,226
Stor., Dun. & Glen.:									
Townships S.	132	770	1,618	.....	5,421	32,192	12,900	.....	5,663
Townships D.	.....	125	1,112	.....	12,166	32,679	30,205	.....	62,914
Townships G.	55	1,747	422	.....	8,385	36,585	2,028	.....	209
Villages D.	284	35	393	149	1,889	19,167	.....	.....	40
Villages G.	228	.....	47	21	213	1,851	.....	.....	.....
Towns S.	650	495	1,163	3,031	.....	13,348	.....	840	537
Towns G.	.....	36	67	190	249	2,568	.....	.....	.....
United Counties	648	.....	1,535	9,844	21,043	.....	.....	.....	.....
Totals	.....	.....	.....	.....	.....	.....	.....	.....	.....
1903	1,997	3,208	6,357	13,235	49,366	138,390	45,133	840	69,363
1902	4,205	11,046	4,830	11,266	29,182	144,335	71,797	2,549	10,818
Thunder Bay:									
Townships	311	657	99	.....	.....	9,424	.....	812	.....
Towns	71,767	1,438	2,134	5,918	.....	13,419	.....	24,547	14,072
Totals:									
1903	72,078	2,095	2,233	5,918	.....	22,843	.....	25,359	14,072
1902	56,269	2,274	970	4,322	.....	31,373	.....	31,994	6,778

INTO COUNTIES AND DISTRICTS FOR THE YEAR 1902 AND 1903.

Disbursements.—*Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.
$	$	$	$	$	$	$	$	$	$	$
495	.....	.....	4,513	1,012	.....	283	61,397	1,604	6,665	10,574
.....	.....	200	1,875	223	.....	120	4,654	78	117	.....
.....	.....	2,731	1,064	2,121	.....	1,393	41,076	176	865	.....
.....	.....	.....	.....	171	.....	1,521	16,369	.....	.....	.....
495	.....	2,931	7,452	3,527	.....	3,317	123,496	1,858	7,647	10,574
478	.....	2,029	6,148	2,953	.....	1,467	106,954	2,126	3,631	9,083
968	.....	224	11,366	832	.....	897	36,367	933	7.358	.....
1,737	.....	6,536	425,167	17,111	.....	3,412	576,366	2,472	14,489	6,045
2,705	.....	6,760	436,533	17,943	.....	4,309	612,733	3,405	21,847	6,045
2,439	.....	7,051	203,697	14,017	3	4,432	297,131	3,902	21,220	4,508
1,615	601	.....	2,944	550	.....	905	87,256	21,972	21,939	1,183
46	.....	100	65	52	.....	37	16,360	957	351	.....
2,050	.....	13,313	63,093	19,936	171	1,641	241,645	407	50,307	10,130
.....	.....	829	2,500	1,383	.....	1,231	57,489	780	.....	11,723
3,711	601	14,242	68,602	21,921	171	3,814	402,750	24,116	72,597	23,036
7,634	120	17,079	121,614	20,583	325	3,370	411,465	17,540	69,093	20,587
1,973	2,051	1,706	17,378	5,139	.....	959	227,026	43,026	32,918	1,536
245	.....	1,854	4,510	1,786	.....	439	31,179	3,145	3,551	.....
3,756	.....	45,744	27,680	58,349	470	17,335	491,134	26,597	26,624	21.387
.....	.....	1,964	40,000	1,957	.....	83,047	185,470	27,624	.....	.....
5,974	2,051	51,268	89,568	67,231	470	101,780	934,809	100,392	63,093	22,923
5,456	1,916	37,799	96,423	58,183	275	20,175	743,999	46,188	68,970	19,642
1,014	8,733	.....	27,594	6,638	97	1,174	119,143	5,958	21,279	.....
1,359	9,299	1,000	30,898	4,802	.....	17,605	225,037	2,889	3,643	.....
1,422	652	591	9,505	1,376	.....	1,841	85,243	265	27,059	.....
2,150	.....	3,713	65,103	5,548	322	993	122,808	3,268	744	.....
.....	.....	.....	1,350	17	.....	124	5,599	161	332	.....
25,000	.....	10,586	22,172	12,761	.....	18,727	129,364	.....	45,827	.....
162	.....	849	29,013	2,570	.....	32	45,995	.....	1,514	.....
.....	3,830	1,385	76,651	2,286	.....	1,498	133,897	5,472	.....	.....
31,107	22,514	18,124	262,286	35,998	419	41,994	867,086	18,013	100,398	.....
5,793	18,752	16,064	172,521	32,721	.....	21,063	711,286	69,546	106,425	23,767
44	.....	.....	5,735	1,167	200	1,261	27,344	3,655	16,234	6,061
.....	.....	6,076	97,376	41,561	.....	67,987	534,181	3,821	36,876	140,625
44	.....	6,076	103,111	42,728	200	69,248	561,525	7,476	53,110	146,686
42	.....	2,253	134,513	40,857	.....	78,977	474,895	11,627	42,665	129,664

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets, December 31.—*Continued.*					Liabilities.	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
	$	$	$	$	$	$	$
Prince Edward :							
Townships	48,675	.....	16,550	603	84,671	.....	.....
Village	.....	275	750	.....	1,220	.....	.....
Town	1,402	48,000	14,500	.....	64,943	.....	.....
County	.....	.....	33,500	374	33,874	.....	.....
Totals :							
1903	50,077	48,275	65,300	977	184,708	.....	.....
1902	49,834	54,222	62,675	1,186	182,757	.....	.....
Rainy River :							
Townships	.....	.....	2,861	6,259	17,411	.....	2,474
Town	.....	223,816	36,283	45,533	328,638	.....	7,728
Totals							
1903	.....	223,816	39,144	51,792	346,049	.....	10,202
1904	.....	118,243	37,157	52,781	237,811	.....	12,002
Renfrew :							
Townships	1,667	.....	9,365	3,568	59,694	9,334	3,672
Villages	.....	.....	5,584	3,073	9,965	646	1,083
Towns	55,397	260,952	82,915	38,113	498,221	3,477	18,742
County	.....	.....	50,000	17,558	80,061	.....	90
Totals							
1903	57,064	260,952	147,864	62,312	647,941	13,457	23,587
1902	35,181	255,000	144,002	38,334	579,737	10,804	24,984
Simcoe :							
Townships	2,853	.....	7,490	29,272	117,095	24,038	7,565
Villages	.....	42,835	16,960	1,374	67,865	1,040	3,235
Towns	45,252	708,541	269,875	24,484	1,122,760	6,020	17,590
County	10,300	.....	158,000	51,179	247,103	.....	.....
Totals :							
1903	58,405	751,376	452,325	106,309	1,554,823	31,098	28,390
1902	55,493	576,657	530,109	81,198	1,378,257	25,409	31,558
Stor., Dun. & Glen.							
Townships S.	5,663	.....	7,150	12,419	52,469	6,009	3,313
Townships D.	64,362	.....	4,200	17,622	92,716	.....	2,459
Townships G.	149	.....	1,970	10,033	39,476	2,457	8,455
Villages D.	40	108,750	19,975	8,101	140,878	447	2,664
Villages G.	.....	.....	738	125	1,356	97	229
Towns S.	3,521	135,632	39,900	5,000	229,880	1,990	13,385
Towns G.	.....	46,500	3,500	2,412	53,926	.....	.....
United Counties	.....	.....	61,000	26,917	93,389	.....	.....
Totals :							
1903	73,735	290,882	138,433	82,629	704,090	11,000	30,505
1902	11,960	278,135	149,903	58,405	698,141	10,838	29,684
Thunder Bay :							
Townships	1,250	.....	5,024	7,355	39,579	.....	422
Towns	605	335,874	91,206	238,099	847,106	.....	6,784
Totals							
1903	1,855	335,874	96,230	245,454	886,685	.....	7,206
1902	8,028	248,249	72,889	171,913	685,035	.....	5,471

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Liabilities, December, 31—*Continued.*

Railway debentures.	School debentures.	Drainage debentures.	Water works debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
.....	527	.....	.....	.....	15,000	6,753	684	608	23,572
.....	.....	.....	.....	.....	1,000	450	.....	.....	1,450
.....	.....	.....	20,256	19,993	.....	1,059	.....	1,371	42,679
.....	.....	.....	.....	.....	.....	1,173	.....	.....	1,173
.....	527	.....	20,256	19,993	16,000	9,435	684	1,979	68,874
.....	1,022	.....	21,150	21,830	16,200	3,050	684	1,401	65,337
.....	10,430	.....	.....	.....	1,576	2,659	.....	170	17,309
.....	30,413	.....	136,956	52,000	49,259	71,499	4,588	4,748	357,191
.....	40,843	.....	136,956	52,000	50,835	74,158	4,588	4,918	374,500
.....	43,548	.....	104,909	.....	52,724	103,639	3,094	2,013	321,929
2,000	3,775	1,796	.....	.....	.....	1,043	30	2,333	23,983
.....	.....	.....	.....	.....	4,100	7,175	.....	.....	13,004
64,247	20,113	.....	220,017	.....	114,403	41,112	.....	3,083	485,194
.....	.....	.....	.....	.....	42,145	10,000	.....	1,621	53,856
66,247	23,888	1,796	220,017	.....	160,648	59,330	30	7,037	576,037
67,326	27,599	2,027	204,999	.....	137,152	42,050	30	5,309	522,280
58,112	15,254	29,679	.....	.....	700	1,450	.....	1,564	138,362
.....	3,197	.....	11,754	8,714	10,392	458	.....	495	39,285
.....	44,812	.....	325,122	251,577	586,455	62,012	.....	12,790	1,306,378
.....	.....	.....	.....	.....	140,906	.....	.....	23,177	164,083
58,112	63,263	29,679	336,876	260,291	738,453	63,920	.....	38,026	1,648,108
59,818	69,237	28,535	396,228	109,879	600,740	47,715	67	36,915	1,406,101
.....	4,804	129,222	.....	.....	.....	31,624	.....	8,740	183,712
2,300	3,334	108,593	.....	.....	.....	18,009	.....	10,626	145,311
.....	7,868	4,512	.....	.....	6,844	7,942	.....	2,415	40,493
.....	15,569	.....	56,733	36,657	17,009	9,819	.....	1,064	139,962
.....	.....	.....	.....	.....	.....	.....	.....	222	548
.....	.....	.....	123,954	.....	145,593	17,364	.....	859	303,145
.....	2,569	.....	24,959	12,518	.....	10,049	.....	350	50,445
.....	.....	13,281	.....	.....	3,884	28,500	.....	187	45,852
2,300	34,134	255,608	205,646	49,175	173,330	123,307	.....	24,463	909,468
3,300	55,621	242,449	191,950	49,596	158,789	120,112	.....	19,629	881,968
.....	7,314	.....	.....	.....	21,500	2,823	1,740	512	34,311
90,000	77,500	.....	70,000	54,000	402,978	260,962	50,622	21,420	1,034,266
90,000	84,814	.....	70,000	54,000	424,478	263,785	52,362	21,932	1,068,577
100,500	78,858	.....	70,000	54,000	405,054	126,518	52,074	4,325	896,800

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Receipts.								
	Balance from previous year.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.	Borrowed on debentures for schools.
	$	$	$	$	$	$	$	$	$
Victoria :									
Townships..	23,414	98,461	316	109	.....	1,136	12,895	11,750	5,000
Villages	5,945	13,815	775	360	1,325	278	.....	2,005	.....
Town	683	59,421	1,856	1,633	8,829	1,572	1,534	52,709	.....
County	614	.....	876	494	.....	.....	.....	21,000	.....
Totals :									
1903..	30,656	171,697	3,823	2,596	10,154	2,986	14,429	87,464	5,000
1902..	30,120	162,241	3,665	2,162	8,526	2,313	4,206	46,355	.....
Waterloo :									
Townships..	7,116	107,076	1,534	32	.....	2,388	15,546	1,700	.....
Villages	1,504	22,814	730	77	.....	.....	.....	16,624	.....
Towns.....	2,761	207,018	6,247	5,815	53,612	6,133	9,601	99,567	.....
County	97	.....	160	89	.....	.....	.....	27,758	.....
Totals :									
1903..	11,478	336,908	8,671	6,013	53,612	8,521	25,147	145,649	.....
1902..	9,578	301,988	8,191	4,741	35,006	7,134	7,966	86,762	7,800
Welland :									
Townships..	5,706	81,541	1,093	516	.....	1,976	6,351	5,909	.....
Villages	4,330	31,462	1,159	205	4,306	133	10,824	9,482	2,000
Towns.....	18,879	90,282	2,508	2,262	35,155	1,471	.....	65,514	7,400
County	.....	.....	166	95	.....	17	.....	10,500	.....
Totals :									
1903..	28,915	203,285	4,926	3,078	39,461	3,597	17,175	91,405	9,400
1902..	43,701	181,987	4,383	1,381	36,719	5,862	1,374	84,825	.....
Wellington :									
Townships..	8,553	156,910	1,041	146	.....	1,279	4,884	22,528	1,800
Villages	6,972	35,960	1,812	1,473	.....	381	2,104	15,422	.....
Towns.....	2,841	48,472	2,006	682	7,650	1,616	9,273	137,885	.....
City.....	11,219	88,760	2,889	3,340	15,222	13,081	48,876	246,600	16,700
County	4,355	.....	293	140	.....	175	.....	21,000	.....
Totals :									
1903..	33,940	330,102	8,041	5,781	22,872	16,532	65,137	443,435	18,500
1902..	44,130	289,466	6,843	4,760	24,929	14,941	51,696	104,715	8,800
Wentworth :									
Townships..	21,016	106,708	657	519	.....	3,256	22,538	1,383	.....
Village	39	1,855	145	.....	.....	.....	.....	500	.....
Town	28	35,303	568	399	2,102	841	1,545	5,000	.....
City.....	5,787	597,126	14,988	46,093	195,118	15,872	106,541	186,306	.....
County	27,782	.....	156	408	.....	1,564	.....	.....	.....
Totals :									
1903..	54,652	740,992	16,514	47,419	197,220	21,533	130,624	193,189	.....
1902..	42,158	708,833	16,459	43,289	191,352	23,197	121,934	328,867	25,000
York :									
Townships..	31,219	243,882	3,200	55	.....	7,656	36,752	7,236	15,120
Villages	4,631	28,619	1,230	234	2,875	269	189	935	.....
Towns.....	13,694	130,697	3,411	826	25,933	3,014	27,156	19,886	.....
City.....	607,361	3,134,242	69,683	512,610	381,982	204,987	1,041,055	1,286,480	26,000
County.....	27,071	.....	408	289	.....	516	.....	.....	.....
Totals :									
1903..	683,976	3,537,440	77,932	514,014	410,790	216,442	1,105,152	1,314,537	41,120
1902..	355,683	3,615,286	72,799	510,374	375,947	202,348	1,140,619	1,519,280	247,200

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Receipts.—*Continued.*						Disbursements.				
Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Roads, streets, bridges and parks.
$	$	$	$	$	$	$	$	$	$	$
2,020	.....	118	2,007	4,182	161,408	6,115	.....	613	1,892	26,111
.....	42,500	.....	.....	364	67,367	799	954	244	952	2,367
.....	.....	.....	200	824	129,261	4,021	10,938	363	3,382	49,766
.....	.....	.....	.....	30,043	53,027	3,357	.....	30	3,143	1,219
2,020	42,500	118	2,207	35,413	411,063	14,292	11,892	1,250	9,369	79,463
1,000	.....	6	341	27,005	287,940	13,290	11,763	859	6,928	41,349
.....	.....	.....	.....	1,036	136,428	5,726	.....	208	1,543	17,481
.....	471	.....	69	144	42,433	750	1,565	157	423	5,737
.....	200,095	349	100	30,968	622,266	10,090	59,965	1,373	6,148	64,855
.....	.....	.....	.....	40,200	68,304	3,012	.....	65	3,346	6,336
.....	200,566	349	169	72,348	869,431	19,578	61,530	1,803	11,460	94,409
.....	93,138	2,104	104	67,441	631,953	20,768	52,712	2,083	11,311	86,880
3,377	2,000	.....	.....	1,894	110,363	4,315	.....	1,339	2,106	17,877
.....	12,000	.....	.....	273	76,174	1,681	8,335	601	1,234	8,956
.....	8,000	.....	100	2,384	233,955	6,666	34,917	629	3,273	35,031
.....	.....	.....	.....	18,984	59,762	2,085	.....	22	1,966	19,759
3,377	22,000	.....	100	53,535	480,254	14,747	43,252	2,591	8,579	81,623
1,946	59,094	15	50	35,149	456,486	16,327	30,165	903	8,643	57,792
.....	.....	.....	30	2,035	199,206	9,219	.....	484	2,382	31,057
.....	6,824	.....	258	1,405	72,611	1,722	2,873	131	1,684	10,623
.....	32,805	.....	205	873	244,308	2,072	12,039	592	1,618	3,875
.....	262,369	.....	.....	3,015	712,071	4,720	22,001	2,014	4,333	13,417
.....	.....	.....	.....	57,342	83,305	3,576	.....	.....	2,268	15,007
.....	301,998	.....	493	64,670	1,311,501	21,309	36,913	3,221	12,285	73,979
4,549	37,841	102	1,686	57,664	652,122	21,095	33,452	1,609	10,469	67,984
.....	.....	.....	.....	5,912	161,989	6,718	.....	1,213	3,023	18,591
.....	.....	.....	.....	19	2,558	133	22	5	86	1,099
.....	.....	.....	.....	3,234	49,020	1,272	2,797	438	1,473	4,631
.....	274,651	.....	.....	93,777	1,536,259	29,909	138,202	4,905	20,990	247,147
.....	98,000	.....	.....	77,850	205,760	5,396	.....	1,200	6,257	38,708
.....	372,651	.....	.....	180,792	1,955,586	13,428	141,021	7,761	31,829	310,176
.....	143,787	.....	163	130,606	1,775,645	42,971	131,359	7,101	28,652	349,161
.....	.....	20	73	9,840	355,053	15,901	.....	1,666	6,206	68,482
.....	.....	.....	.....	925	39,907	2,087	5,400	81	1,183	7,428
.....	29,100	333	.....	14,545	268,595	6,449	37,894	3,823	4,475	21,143
.....	855,084	.....	.....	201,443	8,320,927	125,229	567,244	33,404	160,410	1,223,187
.....	.....	.....	.....	75,830	104,114	5,537	.....	1,029	4,058	6,443
.....	884,184	353	73	302,583	9,088,596	155,203	610,538	40,003	176,332	1,326,683
.....	446,091	2,724	324	391,525	8,880,200	151,287	563,348	47,559	92,551	1,207,846

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Disbursements—*Continued.*									
	Waterworks and electric light construction.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police service	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$	$	$	$
Victoria :										
Townships..	.....	325	1,326	2,025	.....	18,580	46,673	1,044	4,756	1,397
Villages	37,490	1,886	506	188	590	1,037	5,884	.....	238	2,831
Town	3,779	1,520	1,374	876	1,950	2,629	16,454	.....	2,048	29
County ..	.....	1,294	.....	2,060	8,532	.....	7,649	.....	.....	.....
Totals :										
1903..	41,269	5,025	3,206	5,149	11,072	22,246	76,660	1,044	7,042	4,257
1902..	1,625	8,003	1,856	4,045	9,572	19,022	67,050	2,032	8,264	2,023
Waterloo :										
Townships..	.....	.....	2,455	33	.....	20,246	52,186	.....	14,050	993
Villages	.....	.....	102	16	67	1,229	7,399	.....	337	10,000
Towns.....	116,473	32,331	11,678	3,253	5,909	11,789	79,151	.....	11,647	17,984
County	.....	100	.....	8,735	7,846	.....	8,529	.....	.....	.....
Totals :										
1903..	116,473	32,431	14,235	12,037	13,822	33,264	147,265	.....	26,034	28,977
1902..	28,590	20,185	2,635	11,935	12,185	30,264	123,314	.....	15,329	8,869
Welland :										
Townships..	.....	284	979	135	.....	26,281	31,152	3,677	6,563	.....
Villages	18,904	.....	433	241	285	2,927	11,843	.....	.....	.....
Towns.....	12,159	3,000	496	1,034	2,825	3,805	30,467	.....	2,793	.....
County	.....	156	.....	4,543	9,745	.....	7,828	.....	.....	.....
Totals :										
1903..	31,063	3,440	1,908	5,953	12,855	33,013	81,290	3,677	9,356	.....
1902..	41,371	383	527	5,079	13,371	20,472	69,747	2,294	3,905	10,824
Wellington :										
Townships..	.....	.....	1,620	474	.....	43,184	64,809	2,673	732	2,886
Villages	.....	4,520	383	213	936	3,557	14,768	.....	.....	298
Towns.....	4,121	375	113	16	717	3,027	10,806	.....	7,444	33,862
City.....	201,550	33,000	2,730	3,517	8,562	.....	39,675	.....	43,838	284,634
County	.....	2,157	.....	8,198	11,624	.....	10,693	.....	.....	.....
Totals :										
1903..	205,671	40,052	4,846	12,418	21,839	49,768	140,751	2,673	52,014	321,680
1902..	28,379	10,980	3,153	12,406	20,720	38,273	130,434	4,010	23,230	22,053
Wentworth :										
Townships..	.....	475	2,713	1,728	.....	35,097	40,510	112	310	19,417
Village	.....	.....	8	12	24	323	770	.....	.....	.....
Town	737	1,930	58	346	1,002	2,580	7,221	.....	1,859	9,038
City.....	47,280	.....	13,343	50,135	69,164	.....	121,480	.....	151,532	408
County	.....	.....	.....	825	12,852	.....	6,691	.....	.....	.....
Totals :										
1903..	48,017	2,405	16,122	53,046	83,042	38,000	176,672	112	153,701	28,863
1902..	58,924	87	12,950	53,356	75,220	22,999	194,762	.....	151,770	19,651
York :										
Townships..	.....	242	1,192	842	.....	38,258	108,043	.....	7,763	28,845
Villages	.....	.....	106	129	239	2,179	8,461	.....	.....	.....
Towns.....	14,946	1,036	6,445	865	5,542	2,494	39,172	.....	18,798	16,855
City.....	54,099	159,963	48,154	80,397	445,699	.....	742,489	.....	1,280,850	159,566
County	.....	5,388	.....	7,582	16,970	.....	13,054	.....	.....	8,000
Totals :										
1903..	69,045	166,629	55,897	89,815	468,450	42,931	911,219	.....	1,307,411	213,266
1902..	89,188	262,747	54,969	92,213	451,675	56,607	906,330	618	1,051,298	251,712

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Disbursements—*Continued.*								Assets, December 31.		
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.
$	$	$	$	$	$	$	$	$	$	$
1,582	840	10,002	12,879	3,205	.....	617	139,980	21,428	12,001	20,472
.....	.....	35	1,980	231	1,054	498	59,764	7,603	3,364	2,464
198	.....	7,164	3,404	15,560	.....	3,141	128,596	665	12,727	22,254
.....	.....	.....	19,000	622	.....	5,413	52,319	708	.....	.....
1,780	840	17,201	37,263	19,616	1,054	9,669	380,659	30,404	28,092	45,190
1,262	804	6,065	28,114	17,480	.....	5,878	257,284	30,656	29,542	51,043
1,641	690	2,379	1,800	1,888	.....	1,222	124,541	11,887	1,441	56,341
.....	.....	3,095	6,152	2,029	123	2,454	41,635	798	361	6,183
1,464	.....	26,050	75,505	41,089	266	43,869	620,889	1,377	8,902	79,800
.....	.....	2,890	25,322	1,357	.....	710	68,248	56	.....	.....
3,105	690	34,414	108,779	46,363	389	48,255	855,313	14,118	10,704	142,324
3,118	566	26,454	99,332	42,720	15	21,210	620,475	11,478	18,102	138,864
1,074	1,952	.....	5,573	841	.....	1,742	105,890	4,473	18,401	18,212
168	.....	3,790	5,700	4,444	290	2,071	71,903	4,271	3,002	.....
2,410	.....	14,449	28,990	24,087	.....	12,441	219,472	14,483	27,334	21,842
.....	.....	.....	10,542	386	.....	1,738	58,770	992	.....	.....
3,652	1,952	18,239	50,805	29,758	290	17,992	456,035	24,219	48,737	40,054
3,668	2,009	17,398	75,207	31,655	86	15,745	427,571	28,915	41,780	37,049
2,125	1,334	400	20,332	1,661	.....	756	186,128	13,078	40,207	14,939
768	.....	4,047	14,808	3,436	.....	1,850	66,617	5,994	6,727	.....
234	.....	8,205	134,919	13,107	160	1,876	239,178	5,130	4,866	19,683
.....	.....	14,500	.....	29,079	.....	4,345	711,915	156	4,900	139,585
.....	.....	.....	12,000	283	.....	5,262	71,068	12,237	.....	.....
3,127	1,334	27,152	182,059	47,566	160	14,089	1,274,906	36,595	56,700	174,207
2,115	1,125	13,275	112,900	42,792	175	17,553	618,182	33,940	69,506	177,259
1,116	.....	644	8,054	764	.....	2,043	142,528	19,461	18,200	56,846
.....	.....	.....	.....	.....	.....	14	2,496	62	590	.....
600	.....	2,235	5,183	3,890	.....	1,701	48,991	29	13,228	25,047
15,670	.....	77,274	249,044	174,247	3,390	115,230	1,529,350	6,909	257,967	419,076
.....	.....	1,123	68,132	816	1,315	835	144,150	61,610	.....	.....
17,386	.....	81,276	330,413	179,717	4,705	119,823	1,867,515	88,071	289,985	500,969
18,490	.....	71,805	213,348	180,291	.....	88,096	1,720,993	54,652	317,711	395,887
6,288	219	7,834	8,736	6,458	.....	12,468	319,443	35,610	30,249	40,411
929	.....	2,347	701	2,744	.....	699	34,713	5,194	2,190	8,386
1,681	.....	14,488	39,929	24,706	.....	2,850	263,591	5,004	36,777	46,410
13,675	.....	495,340	1,471,547	900,758	26,040	74,564	8,062,615	258,312	861,314	6,091,246
.....	.....	7,397	.....	4,369	.....	2,990	82,817	21,297	.....	.....
22,573	219	527,406	1,520,913	939,035	26,040	93,571	8,763,179	325,417	930,539	6,186,453
68,464	211	720,401	902,232	953,095	15,784	256,089	8,196,224	683,976	966,672	5,758,674

FINANCIAL STATEMENT OF ONTARIO MUNICIPALITIES GROUPED

Counties and Districts.	Assets, December 31.—*Continued.*					Liabilities.	
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.	County levy.	Local school rates.
	$	$	$	$	$	$	$
Victoria :							
Townships	3,274	.....	7,160	15,064	79,399	12,138	4,683
Villages	3,467	39,610	14,676	609	71,793	813	3,638
Town	17,029	87,000	57,347	73,015	270,037	2,617	.....
County	.....	.....	70,388	17,594	88,690	.....	.....
Totals :							
1903	23,770	126,610	149,571	106,282	509,919	15,568	8,321
1902	21,047	84,180	142,156	64,338	422,962	17,359	8,148
Waterloo :							
Townships	1,334	.....	2,980	12,576	86,559	.....	.....
Villages	12,300	.....	16,306	479	36,427	.....	.....
Towns	19,549	517,667	292,151	147,138	1,066,584	.....	7,911
County	.....	.....	89,000	1,102	90,158	.....	.....
Totals :							
1903	33,183	517,667	400,437	161,295	1,279,728	.....	7,911
1902	6,857	373,041	335,302	248,715	1,132,359	.....	10,765
Welland :							
Townships	26,000	.....	21,165	18,642	106,893	950	11,112
Villages	500	74,329	22,205	33,647	137,954	.....	4,420
Towns	.....	275,849	98,109	220,867	658,484	1,155	5,237
County	.....	.....	124,314	6,563	131,869	.....	.....
Totals :							
1903	26,500	350,178	265,793	279,719	1,035,200	2,105	20,769
1902	37,324	330,705	277,722	286,660	1,040,155	5,717	18,940
Wellington :							
Townships	10,519	.....	6,450	9,668	94,861	20,776	9,608
Villages	5,553	.....	53,421	7,142	78,837	1,416	2,375
Towns	67,867	47,000	29,553	25,460	199,559	907	1,300
City	477,634	306,102	183,898	123,416	1,235,691	.....	1,121
County	.....	.....	80,000	36,732	128,969	.....	3,538
Totals :							
1903	561,573	353,102	353,322	202,418	1,737,917	23,099	17,942
1902	249,964	195,600	302,759	166,710	1,195,738	27,000	15,484
Wentworth :							
Townships	29,769	.....	14,460	10,847	149,583	.....	4,852
Village	.....	.....	1,075	34	1,761	.....	.....
Town	9,038	47,974	70,748	8,474	174,538	.....	.....
City	125,865	2,023,198	1,775,880	853,547	5,462,442	.....	.....
County	.....	.....	195,000	5,402	262,012	.....	.....
Totals :							
1903	164,672	2,071,172	2,057,163	878,304	6,050,336	.....	4,852
1902	217,814	2,054,424	2,003,168	705,091	5,748,747	.....	3,729
York :							
Townships	120,487	.....	9,270	109,823	345,850	20,912	16,201
Villages	.....	46,130	20,516	4,509	86,925	496	1,658
Towns	17,095	351,838	71,532	544,323	1,072,979	795	23,005
City	.....	4,349,385	10,182,958	2,664,442	24,407,657	.....	.....
County	8,000	.....	137,000	29,829	196,126	.....	125
Totals :							
1903	145,582	4,747.353	10,421,276	3,352,926	26,109,537	22,203	40,989
1902	157,836	4,743,496	10,467,039	2,776,972	25,554,665	18,803	33,280

INTO COUNTIES AND DISTRICTS FOR THE YEARS 1902 AND 1903.

Liabilities, December 31.—*Concluded.*

Railway debentures.	School debentures.	Drainage debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.
$	$	$	$	$	$	$	$	$	$
22,000	14,011	13,459	.....	.....	1,480	.....	.....	2,611	71,282
.....	.....	.....	39,000	.....	6,718	325	.....	4,002	54,496
.....	45,231	.....	77,960	.....	177,466	87,708	.....	2,210	393,192
.....	.....	.....	.....	.....	.....	19,000	.....	305	19,305
22,000	60,142	13,459	116,960	.....	185,664	107,033	.....	9,128	538,275
31,822	56,922	12,279	78,320	.....	189,183	56,708	.....	7,064	457,805
11,100	8,688	3,888	.....	.....	14,020	600	.....	487	38,783
5,300	10,200	.....	.....	.....	20,591	11,624	.....	1,274	48,989
.....	41,681	.....	326,971	118,472	550,178	65,867	565	5,480	1,117,125
.....	.....	.....	.....	.....	32,113	2,758	.....	516	35,387
16,400	60,569	3,888	326,971	118,472	616,902	80,849	565	7,757	1,240,284
18,675	63,674	4,578	326,727	16,080	551,111	43,979	4,402	11,155	1,051,146
.....	7,634	7,123	.....	.....	2,000	1,084	.....	1,770	31,673
.....	4,364	.....	59,876	.....	34,848	7,482	.....	7,336	118,326
73,030	41,800	.....	31,358	73,030	239,467	75,698	.....	21,734	562,509
.....	.....	.....	.....	.....	.....	4,500	.....	12	4,512
73,030	53,798	7,123	91,234	73,030	276,315	88,764	.....	30,852	717,020
.....	48,050	5,698	160,080	74,982	274,786	48,055	109	34,586	671,003
2,848	9,807	13,071	.....	.....	.....	2,076	2,760	2,135	63,081
.....	8,974	.....	.....	.....	45,034	6,860	1,036	1,662	67,357
.....	17,361	.....	26,733	11,563	221,735	24,327	.....	225	304,151
193,000	34,400	.....	50,600	155,000	430,199	261,600	.....	4,457	1,130,377
.....	.....	.....	.....	.....	.....	21,000	.....	13,631	38,169
195,848	70,542	13,071	77,333	166,563	696,968	315,863	3,796	22,110	1,603,135
196,248	55,169	14,405	52,100	11,786	601,732	57,120	1,125	20,340	1,052,509
.....	11,674	.....	.....	.....	2,206	2,288	.....	909	21,929
.....	.....	.....	.....	.....	.....	514	.....	.....	514
.....	1,200	.....	38,890	.....	37,403	.....	.....	676	78,169
250,000	240,584	.....	1,179,116	.....	2,554,622	186,306	.....	33,844	4,444,472
.....	.....	.....	.....	.....	113,759	.....	.....	1,969	115,728
250,000	253,458	.....	1,218,006	.....	2,707,990	189,108	.....	37,398	4,660,812
250,000	270,844	.....	1,181,762	.....	2,452,859	326,458	.....	36,886	4,522,538
1,233	67,860	.....	.....	.....	41,028	.....	12,829	6,675	166,738
.....	19,803	.....	28,870	6,790	12,738	1,104	.....	948	72,407
.....	43,105	.....	108,848	23,049	1,145,695	7,626	3,456	3,584	1,359,163
1,143,718	1,846,329	.....	3,895,094	.....	14,922,372	1,286,480	.....	1,348,747	24,442,740
.....	.....	.....	.....	.....	99,258	.....	.....	16,254	115,637
1,144,951	1,977,097	.....	4,032,812	29,839	16,221,091	1,295,210	16,285	1,376,208	26,156,685
1,146,246	1,958,550	219	4,011,881	31,263	15,882,525	1,502,566	15,305	1,252,584	25,853,222

POPULATION, ASSESSMENT AND TAXATION.

Statement of municipalities of Ontario (townships, towns, villages and cities) grouped into County limits, showing for 1904 the population, the area, the assessed values and amount of taxes imposed for all purposes, inclusive of schools, as shown by the assessment and collection rolls, together with the average rate per head of the resident population, and mills on the dollar; also comparative totals by Counties for 1903.

Counties and Districts.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
Algoma:		$	$	$	$	$	$ c.	
Townships	12,223	2,618,166	73,355	3,500	2,695,021	57,948	4 74	21.5
Towns	11,257	5,710,996	264,025	52,050	6,027,071	127,927	11 36	21.2
Totals:								
1904.....	23,480	8,329,162	337,380	55,550	8,722,092	185,875	7 92	21.3
1903.....	23,265	8,984,551	355,970	87,855	9,428,376	189,883	8 16	20.1
Brant:								
Townships	12,748	9,390,626	60,300	8,120	9,459,046	72,715	5 70	7.7
Town	3,507	1,009,382	90,890	13,500	1,113,772	24,536	7 00	22.0
City	19,496	7,068,005	917,825	107,760	8,093,590	179,807	9 22	22.2
Totals:								
1904	35,751	17,468,013	1,069,015	129,380	18,666,408	277,058	7 75	14.8
1903	34,920	16,888,253	882,890	181,085	17,952,228	265,211	7 59	14.8
Bruce:								
Townships	37,081	18,453,241	128,530	6,550	18,588,321	171,437	4 62	9.2
Villages	8,901	1,968,387	240,175	22,800	2,231,362	48,926	5 50	21.9
Towns.....	8,056	1,887,015	241,950	35,250	2,164,215	53,477	6 64	24.7
Totals:								
1904	54,038	22,308,643	610,655	64,600	22,983,898	273,840	5 07	11.9
1903	54,732	22,143,932	496,479	74,905	22,715,316	267,018	4 88	11.8
Carleton:								
Townships	27,449	9,387,526	30,225	.....	9,417,751	132,642	4 83	14.1
Villages	4,629	880,149	14,300	.....	894,449	23,115	4 99	25.8
City	63,234	29,507,175	2,068,200	758,350	32,333,725	718,485	11 36	22.2
Totals:								
1904	95,312	39,774,850	2,112,725	758,350	42,645,925	874,242	9 17	20.5
1903	94,630	36,807,970	1,926,410	820,250	39,554,630	848,460	8 97	21.5
Dufferin:								
Townships	14,570	8,209,946	30,050	400	8,240,396	72,530	4 98	8.8
Villages.....	1,997	519,390	24,300	6,550	550,240	12,035	6 03	21.9
Town	2,422	775,895	2,700	9,650	788,245	21,378	8 83	27.1
Totals:								
1904	18,989	9,505,231	57,050	16,600	9,578,881	105,943	5 58	11.1
1903	19,183	9,338,094	45,875	20,100	9,404,069	106,895	5 57	11.4
Dundas:								
Townships	13,260	5,462,570	52,250	7,250	5,522,070	84,088	6 34	15.2
Villages.....	4,638	1,173,375	98,500	23,300	1,295,175	30,268	6 53	23.4
Totals:								
1904	17,898	6,635,945	150,750	30,550	6,817,245	114,356	6 39	16.8
1903	18,138	6,628,970	156,950	32,900	6,818,820	113,126	6 24	16.6
Durham:								
Townships	16,808	9,459,296	20,875	4,700	9,484,871	84,083	5 00	8.9
Villages.....	1,425	362,830	12,675	1,700	377,205	8,030	5 64	21.3
Towns	7,101	2,331,600	268,425	53,140	2,653,165	66,258	9 33	25.0
Totals:								
1904	25,334	12,153,726	301,975	59,540	12,515,241	158,371	6 25	12.7
1903	25,084	12,199,060	259,125	66,280	12,524,465	152,619	6 08	12.2
Elgin:								
Townships	24,284	12,688,893	53,970	3,370	12,746,233	174,565	7 19	13.7
Villages.....	2,184	540,588	52,205	4,950	597,743	11,590	5 31	19.4
Town	2,129	638,850	72,635	4,700	716,185	22,530	10 58	31.5
City	12,037	4,417,785	311,500	80,700	4,809,985	136,587	11 35	28.4
Totals:								
1904	40,634	18,286,116	490,310	93,720	18,870,146	345,272	8 50	18.3
1903	40,404	18,449,212	468,180	183,165	19,100,557	337,092	8 34	17.6

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Counties and Districts.	Population.	Assessed values,				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable property.	Total.	Total.	Per head.	Mills on $
Essex :		$	$	$	$	$	$ c.	
Townships	32,517	12,436,352	51,561	5,750	12,493,663	232,161	7 14	18.6
Village	544	64,397	1,575	.....	65,972	1,805	3 32	27.3
Towns	12,047	3,858,742	1,114,733	81,950	5,055,425	110,409	9 16	21.8
City	13,835	5,443,625	273,925	50,300	5,767,850	172,077	12 44	29.8
Totals :								
1904	58,943	21,803,116	1,441,794	138,000	23,382,910	516,452	8 76	22.1
1903	58,410	21,437,167	1,420,158	164,340	23,021,665	485,751	8 32	20.1
Frontenac :								
Townships	20,171	4,616,726	11,024	22,700	4,650,450	103,253	5 12	22.2
Villages	863	129,790	25,900	10,300	165,990	3,997	4 63	24.1
City	18,444	6,801,425	851,275	212,375	7,865,075	155,301	8 42	19.7
Totals,								
1904	39,478	11,547,941	888,199	245,375	12,681,515	262,551	6 65	20.7
1903	39,752	11,597,373	721,500	287,275	12,606,148	262,674	6 61	20.8
Glengarry :								
Townships	17,052	3,876,717	2,700	400	3,879,817	67,308	3 95	17.3
Villages	1,360	148,635	600	.....	149,235	3,991	2 93	26.7
Town	2,187	345,865	18,260	.....	364,125	10,180	4 65	28.0
Totals :								
1904	20,599	4,371,217	21,560	400	4,393,177	81,479	3 96	18.5
1903	20,877	4,342,162	20,517	500	4,363,179	76,991	3 69	17.6
Grenville :								
Townships	11,884	4,499,404	7,250	2,600	4,509,254	51,366	4 32	11.4
Villages	3,416	993,540	72,060	22,300	1,087,900	19,859	5 81	18.3
Town	2,899	908,860	27,750	7,700	944,310	22,889	7 90	24.2
Totals :								
1904	18,199	6,401,804	107,060	32,600	6,541,464	94,114	5 17	14.4
1903	18,539	6,352,774	108,285	33,400	6,494,459	93,379	5 04	14.4
Grey :								
Townships	46,568	17,233,097	66,950	1,600	17,301,647	204,745	4 40	11.8
Villages	4,086	789,185	49,990	3,050	842,225	19,300	4 72	22.9
Towns	14,578	4,201,761	642,410	56,925	4,901,096	123,074	8 44	25.1
Totals :								
1904	65,232	22,224,043	759,350	61,575	23,044,968	347,119	5 32	15.1
1903	65,160	21,953,930	493,190	75,497	22,522,617	337,446	5 18	15.0
Haldimand :								
Townships	14,390	6,943,404	27,720	2,350	6,973,474	76,401	5 31	11.0
Villages	2,622	534,314	37,750	2,800	574,864	14,575	5 56	25.4
Town	2,204	657,910	88,300	4,400	750,610	16,409	7 45	21.9
Totals :								
1904	19,216	8,135,628	153,770	9,550	8,298,948	107,385	5 59	12.9
1903	19,524	8,085,286	137,250	7,725	8,230,261	96,779	4 96	11.8
Haliburton : (Tps)								
1904	5,835	554,400	8,860	700	563,960	21,054	3 61	37.3
1903	5,899	537,117	10,160	1,000	548,277	21,311	3 61	38.9
Halton :								
Townships	11,241	7,499,863	40,765	18,150	7,558,778	53,839	4 79	7.1
Villages	4,028	992,560	68,350	3,100	1,064,010	19,423	4 82	18.3
Towns	3,128	832,920	38,550	7,500	878,970	20,962	6 70	23.8
Totals :								
1904	18,397	9,325,343	147,665	28,750	9,501,758	94,224	5 12	9.9
1903	18,399	9,294,566	151,190	37,305	9,483,061	92,080	5 00	9.7
Hastings :								
Townships	33,960	9,261,718	15,200	1,500	9,278,418	142,610	4 20	15.4
Villages.....	4,016	901,208	77,020	13,100	991,328	20,726	5 16	20.9
Towns	7,286	1,949,186	83,230	20,250	2,052,666	51,285	7 04	25.0
City	8,387	3,326,394	304,887	119,936	3,751,217	90,942	10 84	24.2
Totals :								
1904	53,649	15,438,506	480,337	154,786	16,073,629	305,563	5 70	19.0
1903	54,607	15,396,613	494,599	188,737	16,079,949	293,693	5 38	18.3

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Counties and Districts.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
Huron:								
Townships	40,615	27,117,606	126,405	5,200	27,249,211	226,421	5 57	8.3
Villages	5,464	1,368,808	140,680	7,425	1,516,913	31,696	5 80	20.9
Towns	10,700	3,066,769	214,800	58,000	3,339,569	81,198	7 59	24.3
Totals:								
1904	56,779	31,553,183	481,885	70,625	32,105,693	339,315	5 98	10.6
1903	57,507	31,323,002	462,170	84,550	31,869,722	307,022	5 34	9.6
Kent:								
Townships	32,265	18,208,385	56,900	23,000	18,288,285	269,028	8 34	14.7
Villages	1,918	433,800	42,375	7,900	484,075	14,211	7 41	29.4
Towns	9,540	2,232,375	223,995	10,710	2,467,080	65,131	6 83	26.4
City	9,587	3,644,609	155,750	35,200	3,835,559	128,398	13 39	33.5
Totals:								
1904	53,310	24,519,169	479,020	76,810	25,074,999	476,768	8 94	19.0
1903	53,395	24,597,116	434,275	82,275	25,113,666	445,816	8 35	17.8
Lambton:								
Townships	31,280	19,305,886	74,770	1,400	19,382,056	252,403	8 07	13.0
Villages	5,642	1,407,862	92,653	3,300	1,503,815	31,574	5 60	21.0
Towns	14,624	4,485,026	259 615	117,408	4,862,049	138,991	9 50	28.6
Totals:								
1904	51,546	25,198,774	427,038	122,108	25,747,920	422,968	8 21	16.4
1903	50,964	25,310,044	423,703	126,461	25,860,208	358,930	7 04	13.9
Lanark:								
Townships	18,572	5,310,468	32,625	.....	5,343,093	78.431	4 22	14.7
Village	845	153,705	15,500	1,200	170,405	4,334	5 13	25.4
Towns	15,862	4,205,050	340,075	43,350	4,588,475	106,025	6 68	23.1
Totals:								
1904	35,279	9,669,223	388,200	44,550	10,101,973	188,790	5 35	18.7
1903	35,937	9,569,639	384,475	60,300	10,014,414	179,719	5 00	17.9
Leeds:								
Townships	19,722	7,006,266	38,125	5,100	7,049,491	107,038	5 43	15.2
Villages	2,042	362,985	12,925	3,000	378,910	9,281	4 55	24.5
Towns	12,966	4,440,048	302,525	45,150	4,787,723	122,663	9 46	25.6
Totals:								
1904	34,730	11,809,299	353,575	53,250	12,216,124	238,982	6 88	19.6
1903	34,698	11,628,754	307,385	52,790	11,988,929	229,256	6 61	19.1
Lennox & Add'tn:								
Townships	17,122	6,804,580	46,475	9,760	6,860,815	79,944	4 67	11.7
Villages	872	241,400	2,350	2,100	245,850	4,732	5 43	19.2
Town	2,925	948,134	36,300	35,900	1,020,334	26,884	9 19	26.3
Totals:								
1904	20,919	7,994,114	85,125	47,760	8,126,999	111,560	5 33	13.7
1903	21,377	7,987,248	93,575	45,250	8,126,073	111,918	5 24	13.8
Lincoln:								
Townships	13,279	7,090,734	137,288	7,950	7,235,972	74,764	5 63	10.3
Villages	4,386	1,421,194	81,325	7,950	1,510,469	31,902	7 27	21.1
Town	1,468	534,780	17,525	600	552,905	12,781	8 71	23.1
City	11,181	4,422,781	688,780	43,300	5,154,861	118,116	10 56	22.9
Totals:								
1904	30,314	13,469,489	924,918	59,800	14,454,207	237,563	7 84	16.4
1903	29,576	13,388,422	775,140	88,480	14,252,042	231,198	7 82	16.2
Manitoulin.								
Townships	5,159	798,768	42,925	.....	841,693	17,753	3 44	21.1
Towns	1,652	231,590	34,100	2,400	268,090	6,231	3 77	23.2
Totals:								
1904	6,811	1,030,358	77,025	2,400	1,109,783	23,984	3 52	21.6
1903	6,711	1,011,611	66,710	2,000	1,080,321	21,227	3 16	19.6

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Counties and Districts.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
Middlesex :								
Townships	40,869	24,488,596	32,500	3,950	24,525,046	278,448	6 81	11.4
Villages	2,980	739,533	29,150	3,000	771,683	16,870	5 66	21.9
Towns	4,450	1,235,297	96,775	15,400	1,347,472	32,231	7 24	23.9
City	41,742	16,096,621	2,148,650	353,575	18,598,846	462,499	11 08	24.9
Totals :								
1904	90,041	42,560,047	2,307,075	375,925	45,243,047	790,048	8 77	17.5
1903	89,016	42,288,153	2,028,470	382,071	44,698,694	747,685	8 40	16.7
Muskoka :								
Townships	11,760	2,021,204	35,150	100	2,056,454	42,168	3 59	20.5
Village	287	73,150	2,140	.....	75,290	1,818	6 33	24.1
Towns	7,374	1,403,986	136,950	10,000	1,550,936	49,743	6 75	32.1
Totals :								
1904	19,421	3,498,340	174,240	10,100	3,682,680	93,729	4 83	25.5
1903	19,095	3,372,132	167,900	8,250	3,548,282	86,392	4 52	24.3
Nipissing :								
Townships	10,405	1,456,326	15,575	.....	1,471,901	36,022	3 46	24.5
Towns	13,148	2,570,362	269,265	12,750	2,852,377	80,269	6 11	28.1
Totals :								
1904	23,553	4,026,688	284,840	12,750	4,324,278	116,291	4 94	26.9
1903	21,942	3,257,254	235,915	.....	3,493,169	98,987	4 51	28.3
Norfolk :								
Townships	20,240	8,436,803	75,500	4,175	8,516,478	97,816	4 83	11.5
Villages	3,516	798,645	52,650	9,680	860,975	19,203	5 46	22 3
Town	3,074	864,490	57,150	30,780	952,420	22,091	7 19	23.2
Totals :								
1904	26,830	10,099,938	185,300	44,635	10,329,873	139,110	5 18	13.5
1903	26,964	10,051,528	154,675	40,510	10,246,713	132,009	4 90	12.9
Northumberland :								
Townships	21,797	9,988,277	43,800	2,200	10,034,277	98,657	4 53	9.8
Villages	5,647	1,619,224	83,825	6,800	1,709,849	31,051	5 50	18.2
Town	4,249	1,456,970	73,700	21,050	1,551,720	46,335	10 90	29.9
Totals :								
1904	31,693	13,064,471	201,325	30,050	13,295,846	176,043	5 55	13.2
1903	31,651	13,033,951	204,675	41,020	13,279,646	167,835	5 30	12.6
Ontario :								
Townships	26,875	14,420,642	62,100	5,800	14,488,542	138,165	5 14	9.5
Villages.....	3,079	805,780	68,975	5,350	880,105	19,092	6 20	21.7
Towns	8,821	2,423,742	130,975	51,800	2,606,517	66,924	7 59	25.7
Totals :								
1904	38,775	17,650,164	262,050	62,950	17,975,164	224,181	5 78	12.5
1903	39,013	17,607,317	245,850	64,350	17,917,517	211,730	5 43	11.8
Oxford :								
Townships	27,219	19,353,430	129,230	14,200	19,496,860	180,848	6 64	9.3
Villages.....	1,836	486,001	31,325	5,500	522,826	12,657	6 89	24.2
Towns	6,877	2,116,790	99,450	31,200	2,247,440	60,788	8 84	27.0
City	9,424	2,756,400	156,950	35,150	2,948,500	75,580	8 02	25.6
Totals :								
1904	45,356	24,712,621	416,955	86,050	25,215,626	329,873	7 27	13.1
1903	46,061	24,503,103	396,325	96,800	24,996,228	314,111	6 82	12.6
Parry Sound :								
Townships	12,267	2,194,142	68,250	1,500	2,263,892	40,920	3 34	18.1
Villages.....	1,180	225,563	43,280	500	269,343	7,413	6 28	27.5
Town	2,773	591,745	28,850	.....	620,595	17,551	6 33	28.3
Totals :								
1904	16,220	3,011,450	140,380	2,000	3,153,830	65,884	4 06	20.9
1903	16,350	2,919,161	115,720	2,300	3,037,181	61,954	3 79	20.4

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Counties and Districts.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $.
Peel:		$	$	$	$	$	$ c.	
Townships	15,893	9,250,721	19,300	500	9,270,521	80,559	5 07	8.7
Villages	1,042	284,045	21,875	1,200	307,120	5,132	4 93	16.7
Town	2,955	921,155	56,050	18,600	995,805	22,942	7 76	23.0
Totals:								
1904	19,890	10,455,921	97,225	20,300	10,573,446	108,633	5 46	10.3
1903	19,959	10,450,700	94,800	23,700	10,569,200	103,874	5 20	9.8
Perth:								
Townships	27,944	22,513,359	25,300	1,700	22,540,359	191,572	6 86	8.5
Village	736	250,625	7,850	2,500	260,975	3,673	4 99	14.1
Towns	7,789	2,673,418	220,350	42,825	2,936,593	68,922	8 85	23.5
City	12,241	3,866,495	191,450	72,000	4,129,945	110,172	9 00	26.7
Totals:								
1904	48,710	29,303,897	444,950	119,025	29,867,872	374,339	7 69	12.5
1903	48,027	29,117,814	420,475	131,620	29,669,909	360,771	7 51	12.2
Peterborough:								
Townships	18,215	7,293,434	8,675		7,302,109	80,251	4 41	11.0
Villages	3,171	689,193	100,805	1,500	791,498	15,405	4 86	19.5
Town	14,175	5,019,114	388,525	89,550	5,497,189	108,593	7 66	19.8
Totals:								
1904	35,561	13,001,741	498,005	91,050	13,590,796	204,249	5 74	15.0
1903	36,638	12,710,089	423,125	99,750	13,232,964	197,629	5 39	14.9
Prescott:								
Townships	18,764	2,290,558	13,925		2,304,483	63,363	3 38	27.5
Village	1,305	151,425	1,900	1,000	154,325	2,610	2 00	16.9
Towns	6,294	930,964	58,525	6,450	995,939	25,939	4 12	26.0
Totals:								
1904	26,363	3,372,947	74,350	7,450	3,454,747	91,912	3 49	26.6
1903	25,175	3,363,625	71,290	7,300	3,442,215	82,541	3 28	24.0
Prince Edward:								
Townships	11,844	5,492,398	12,040	750	5,505,188	56,013	4 73	10.2
Village	650	212,762		5,050	217,812	2,717	4 18	12.5
Town	3,558	1,272,710	97,300	16,000	1,386,010	26,306	7 39	19.0
Totals:								
1904	16,052	6,977,870	109,340	21,800	7,109,010	85,036	5 30	12.0
1903	16,438	6,736,537	129,100	30,600	6,896,237	80,799	4 92	11.7
Rainy River:								
Townships	3,665	1,156,195	22,750		1,178,945	24,315	6 63	20.6
Towns	6,118	2,216,123	220,525	1,500	2,438,148	65,429	10 69	26.8
Totals:								
1904	9,783	3,372,318	243,275	1,500	3,617,093	89,744	9 17	24.8
1903	8,430	2,561,702	202,430	5,800	2,769,932	73,457	8 71	26.5
Renfrew:								
Townships	33,961	5,070,256	35,865	400	5,106,521	91,304	2 69	17.9
Villages	1,827	355,325	80,075	200	435,600	8,491	4 65	19.5
Towns	12,401	3,117,185	263,100	41,900	3,422,185	87,273	7 04	25.5
Totals:								
1904	48,189	8,542,766	379,040	42,500	8,964,306	187,068	3 88	20.9
1903	48,169	8,146,182	330,830	36,300	8,513,312	172,317	3 58	20.2
Russell:								
Townships	14,942	1,969,961	18,167		1,988,128	63,098	4 22	31.7
Villages	2,226	145,795	4,825		150,620	6,830	3 07	45.3
Totals:								
1904	17,168	2,115,756	22,992		2,138,748	69,928	4 07	32.7
1903	17,328	2,077,930	18,998		2,096,928	68,667	3 96	32.7
Simcoe:								
Townships	50,126	17,146,774	63,400	10,400	17,220,574	224,192	4 47	13.0
Villages	2,887	661,675	52,915	500	715,090	17,996	6 23	25.2
Towns	27,488	6,922,202	364,065	109,100	7,395,367	191,631	6 97	25.9
Totals:								
1904	80,501	24,730,651	480,380	120,000	25,331,031	433,819	5 39	17.1
1903	79,473	24,645,207	479,504	125,500	25,250,211	402,015	5 06	15.9

POPULATION, ASSESSMENT AND TAXATION.—*Concluded.*

Counties and Districts.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
Stormont :								
Townships	18,210	3,788,381	30,240	.....	3,818,621	85,089	4 67	22.3
Town	5,849	1,709,725	84,050	21,000	1,814,775	47,065	8 05	25.9
Totals :								
1904	24,059	5,498,106	114,290	21,000	5,633,396	132,154	5 49	23.5
1903	24,430	5,614,323	109,825	20,700	5,744,848	118,954	4 87	20.7
Thunder Bay :								
Townships.....	1,835	624,893	.....	12,100	636,993	17,026	9 28	26.7
Towns	12,669	4,085,099	357,869	6,000	4,448,968	109,290	8 63	24.6
Totals :								
1904	14,504	4,709,992	357,869	18,100	5,085,961	126,316	8 71	24.8
1903	11,708	4,082,309	258,600	39,350	4,380,259	114,156	9 75	26.1
Victoria :								
Townships	19,427	7,752,160	10,870	1,400	7,764,430	101,127	5 21	13.0
Villages.....	3,543	651,294	52,900	2,246	706,440	14,443	4 08	20.4
Town.....	7,106	1,929,895	193,525	28,500	2,151,920	68,987	9 71	32.1
Totals :								
1904	30,076	10,333,349	257,295	32,146	10,622,790	184,557	6 14	17.4
1903	30,194	10,111,355	229,100	42,146	10,382,601	172,354	5 71	16.6
Waterloo :								
Townships	21,953	13,457,850	53,800	10,380	13,522,030	110,661	5 04	8.2
Villages.....	3,500	947,639	99,000	9,500	1,056,139	18,221	5 21	17.3
Towns	27,897	8,845,185	901,250	156,250	9,902,685	221,038	7 92	22.3
Totals :								
1904	53,350	23,250,674	1,054,050	176,130	24,480,854	349,920	6 56	14.3
1903	52,484	22,901,959	973,720	184,065	24,059,744	331,425	6 31	13.8
Welland :								
Townships	16,373	7,343,234	169,425	3,850	7,516,509	87,784	5 36	11.7
Villages.....	4,303	1,196,540	79,680	7,500	1,283,720	27,071	6 29	21.1
Towns	3,854	1,234,678	111,370	22,100	1,368,148	38,033	9 87	27.8
City	7,062	2,857,920	79,500	.....	2,937,420	75,556	10 70	25.7
Totals :								
1904	31,592	12,632,372	439,975	33,450	13,105,797	228,444	7 23	17.4
1903.....	30,095	11,804,386	387,053	48,600	12,240,039	197,434	6 56	16.1
Wellington :								
Townships.....	29,432	19,927,640	95,785	15,220	20,038,645	174,873	5 94	8.7
Villages.....	5,878	1,395,055	104,450	5,875	1,505,380	33,715	5 75	22.4
Towns.....	5,849	1,509,900	121,150	9,000	1,640,050	41,695	7 13	25.4
City	12,240	3,749,370	248,950	71,000	4,069,320	101,155	8 26	24.9
Totals :								
1904	53,399	26,581,965	570,335	101,095	27,253,395	351,438	6 58	12.9
1903	54,088	25,603,282	554,765	98,760	26,256,807	317,052	5 86	12.1
Wentworth :								
Townships.....	21,573	12,758,986	47,900	5,950	12,812,836	114,636	5 31	8.9
Village.....	620	121,950	6,800	150	128,900	1,786	2 88	13.9
Town	3,384	938,895	92,500	34,850	1,066,245	25,180	7 44	23.6
City.....	57,561	25,417,104	2,811,400	685,700	28,914,204	591,724	10 28	20.5
Totals :								
1904	83,138	39,236,935	2,958,600	726,650	42,922,185	733,326	8 82	17.1
1903	80,724	38,421,209	2,656,247	742,930	41,820,386	689,897	8 55	16.5
York :								
Townships.....	42,763	23,260,864	58,050	25,690	23,344,604	243,558	5 70	10.4
Villages.....	5,734	1,504,998	52,575	9,825	1,567,398	29,515	5 15	18.8
Towns	17,212	5,635,264	241,125	16,400	5,892,789	141,555	8 22	24.0
City	226,365	127,040,251	12,590,472	4,478,511	144,109,234	3,248,452	14 35	22.5
Totals :								
1904	292,074	157,441,377	12,942,222	4,530,426	174,914,025	3,663,080	12 54	20.9
1903	281,376	154,951,342	10,444,711	5,402,501	170,798,554	3,534,493	12 56	20.7

ASSESSMENT AND TAXATION.

Summary statement for the Province of Ontario and of the Population, as shown by the assessment rolls, and of the assessed values and amount of Taxes imposed, as shown by the collection rolls, together with the average rate of taxes per head of population assessed as resident, and rate in mills on the dollar of total assessed value for the nineteen years, 1886 to 1904, classified as rural (townships) urban (towns and incorporated villages) and cities.

Municipalities.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
1904.		$	$	$	$	$	$ c.	
Townships....	1,068,407	477,691,722	2,384,695	262,315	480,338,732	5,630,992	5 27	11.7
Villages	121,825	28,704,319	2,140,203	224,701	31,069,223	661,079	5 43	21.2
Towns.....	363,902	106,877,648	9,047,187	1,453,538	117,378,373	2,897,028	7 96	24.7
Cities	522,836	246,415,960	23,799,514	7,103,857	277,319,331	6,364,851	12 17	23.0
Total.....	2,076,970	859,689,649	37,371,599	9,044,411	906,105,659	15,553,950	7 49	17.2
1903.								
Townships....	1,078,103	475,725,803	2,274,791	306,153	478,306,747	5,338,377	4 95	11.2
Villages	122,999	28,501,101	1,975,829	247,771	30,724,701	630,190	5 12	20.5
Towns.....	356,356	103,758,985	8,185,226	1,592,865	113,537,076	2,746,884	7 71	24.2
Cities	499,058	237,599,527	19,994,418	8,332,559	265,926,504	6,048,581	12 12	22.7
Total.....	2,056,516	845,585,416	32,430,264	10,479,348	888,495,028	14,764,032	7 18	16.6
1902.								
Townships....	1,084,589	463,891,483	2,198,598	274,014	466,364,095	5,044,840	4 65	10.8
Villages	126,609	28,565,295	1,969,086	243,340	30,777,721	621,943	4 91	20.7
Towns.....	339,617	95,859,340	7,916,131	1,591,939	105,367,410	2,502,139	7 37	23.2
Cities	486,452	229,563,184	19,892,087	7,978,766	257,434,037	5,977,909	12 29	23.2
Total.....	2,037,267	817,879,302	31,975,902	10,088,059	859,943,263	14,146,831	6 94	16.5
1901.								
Townships ...	1,092,181	456,406,064	2,161,826	244,036	458,811,926	4,862,630	4 45	10.6
Villages	126,836	27,649,258	1,962,130	238,545	29,849,933	589,798	4 65	19.8
Towns.....	330,412	91,000,970	7,417,856	1,502,551	99,921,377	2,330,691	7 05	23.3
Cities	479,460	221,342,063	18,252,096	7,520,212	247,114,371	5,558,236	11 59	22.5
Total.....	2,028,889	796,398,355	29,793,908	9,505,344	835,697,607	13,341,355	6 58	16.0
1900.								
Townships....	1,095,222	451,535,483	2,422,994	228,576	454,187,053	4,696,255	4 29	10.3
Villages	124,637	27,004,039	1,854,725	223,519	29,082,283	564,750	4 53	19.4
Towns	326,041	88,341,578	6,971,133	1,503,962	96,816,673	2,180,238	6 69	22.5
Cities	467,960	218,659,680	16,707,100	6,982,881	242,349,661	5,551,578	11 86	22.9
Total.....	2,013,860	785,540,780	27,955,952	8,938,938	822,435,670	12,992,821	6 45	15.8
1899.								
Townships....	1,109,806	447,964,611	2,779,272	209,065	450,952,948	4,621,803	4 16	10.2
Villages	133,921	28,765,060	1,951,675	256,622	30,973,357	585,356	4 37	18.9
Towns.....	318,145	86,935,702	6,580,960	1,492,136	95,008,798	2,106,178	6 62	22.2
*Cities	448,876	214,442,167	18,075,255	7,307,948	239,825,370	5,221,947	11 63	21.8
Total.....	2,010,748	778,107,540	29,387,162	9,265,771	816,760,473	12,535,284	6 23	15.3

* Previous to 1904 the city of Woodstock is included with towns.

Previous to 1904 the city of Niagara Falls was represented as town of Niagara Falls and village of Niagara Falls South.

ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
1898.		$	$	$	$	$	$ c.	
Townships....	1,110,894	445,877,275	2,696,084	236,701	448,810,060	4,461,474	4 02	9.9
Villages	134,747	28,594,694	1,902,735	270,596	30,768,025	570,912	4 24	18.6
Towns.....	314,820	85,576,404	6,421,936	1,531,032	93,529,372	2,095,791	6 66	22.4
Cities	440,889	211,334,978	16,547,241	8,195,157	236,077,376	5,094,789	11 56	21.6
Total.....	2,001,350	771,383,351	27,567,996	10,233,486	809,184,833	12,222,966	6 11	15.1
1897.								
Townships....	1,113,530	441,878,264	2,609,661	234,553	444,722,478	4,407,005	3 96	9.9
Villages	133,560	28,314,870	1,903,926	278,911	30,497,707	569,884	4 27	18.7
Towns	312,947	83,529,999	6,343,065	1,565,482	91,438,546	2,069,444	6 61	22.6
Cities	430,940	212,621,741	17,125,503	7,219,402	236,966,646	5,160,592	11 98	21.8
Total.....	1,990,977	766,344,874	27,982,155	9,298,348	803,625,377	12,206,925	6 13	15.2
1896.								
Townships....	1,112,900	444,056,842	2,792,097	268,444	447,117,383	4,292,741	3 86	9.6
Villages	132,451	27,855,878	1,881,680	268,281	30,005,839	557,003	4 21	18.6
Towns.....	306,001	83,194,842	6,456,590	1,617,776	91,269,208	2,005,132	6 55	22.0
Cities	420,934	221,941,541	16,963,651	7,620,011	246,525,203	5,267,909	12 51	21.4
Total.....	1,972,286	777,049,103	28,094,018	9,774,512	814,917,633	12,122,785	6 15	14.9
1895.								
Townships....	1,109,631	445,375,439	2,762,179	279,641	448,417,259	4,473,269	4 03	10.0
Villages	130,889	27,572,493	1,848,480	290,037	29,711,010	544,111	4 16	15.5
Towns	300,655	84,965,120	6,999,896	1,681,819	93,646,835	2,021,455	6 72	21.5
Cities	416,215	225,079,539	16,852,113	7,759,410	249,691,062	5,277,594	12 68	21.1
Total.....	1,957,390	782,992,591	28,462,668	10,010,907	821,466,166	12,316,429	6 29	15.0
1894.								
Townships....	1,103,828	448,216,984	2,899,503	359,616	451,476,103	4,579,044	4 15	10.1
Villages	126,387	26,799,930	1,931,015	276,983	29,007,928	526,813	4 17	18.4
Towns.....	297,194	84,363,681	7,115,395	1,586,389	93,065,465	1,955,980	6 58	21.0
Cities	408,810	227,578,882	17,323,301	7,727,691	252,629,874	5,258,475	12 86	20.8
Total.....	1,936,219	786,959,477	29,269,214	9,950,679	826,179,370	12,320,312	6 36	14.9
1893.								
Rural	1,096,984	448,311,559	2,957,944	359,600	451,629,103	4,629,028	4 22	10.3
Urban.....	415,410	111,724,238	8,923,403	2,029,029	122,676,670	2,449,452	5 90	20.0
Cities	397,665	226,179,831	17,581,320	7,463,128	251,224,279	5,444,180	13 69	21.7
Total.....	1,910,059	786,215,628	29,462,667	9,851,757	825,530,052	12,522,660	6 56	15.2
1892.								
Rural	1,102,467	448,566,182	3,089,202	410,274	452,065,658	4,599,442	4 17	10.2
Urban.....	413,396	110,989,898	8,452,309	2,469,164	121,911,371	2,375,995	5 75	19.5
Cities	393,664	222,997,515	18,928,105	9,308,478	251,234,098	4,828,133	12 26	19.2
Total.....	1,909,527	782,553,595	30,469,616	12,187,916	825,211,127	11,803,570	6 18	14.3
1891.								
Rural	1,116,347	450,559,809	3,101,663	408,892	454,070,364	4,544,291	4 07	10.0
Urban.....	410,545	109,462,152	8,570,172	2,343,484	120,375,808	2,305,025	5 61	19.1
Cities	395,229	216,091,585	19,460,460	8,849,177	244,401,222	4,918,432	12 44	20.1
Total.....	1,922,121	776,113,546	31,132,295	11,601,553	818,847,394	11,767,748	6 12	14.4

ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
1890.								
Rural	1,118,252	448,916,986	3,178,614	371,488	452,467,088	4,473,108	4 00	9.9
Urban	410,530	105,353,091	7,878,486	2,170,656	115,402,233	2,161,644	5 27	18.7
Cities	388,762	202,907,967	19,300,295	8,538,688	230,746,950	4,262,733	10 96	18.5
Total	1,917,544	757,178,044	30,357,395	11,080,832	798,616,271	10,897,485	5 68	13.7
1889.								
Rural	1,130,060	447,114,443	*3,470,224	392,553	450,977,220	4,507,717	3 99	10.0
Urban	400,890	96,567,320	7,773,945	2,112,533	106,453,798	1,993,623	4 97	18.7
Cities	375,951	177,634,932	18,826,684	8,013,182	204,474,798	3,746,858	9 97	18.3
Total	1,906,901	721,316,695	30,070,853	10,518,268	761,905,816	10,248,198	5 37	13.5
1888.								
Rural	1,133,046	433,596,047	26,624,345	395,430	460,615,822	4,494,780	3 97	9.8
Urban	393,461	90,416,611	7,956,694	2,039,724	100,413,029	1,884,918	4 79	18.8
Cities	353,638	160,239,217	19,345,906	8,040,596	187,625,719	3,540,264	10 01	18.9
Total	1,880,145	684,251,875	53,926,945	10,475,750	748,654,570	9,919,962	5 28	13.3
1887.								
Rural	1,140,138	428,372,441	27,381,683	416,039	456,170,163	4,431,720	3 89	9.7
Urban	377,389	83,497,910	7,616,982	2,222,704	93,337,596	1,759,248	4 66	18.8
Cities	330,930	140,795,414	18,226,775	8,781,990	167,804,179	3,109,145	9 40	18.5
Total	1,848,457	652,665,765	53,225,440	11,420,733	717,311,938	9,300,113	5 03	13.0
1886.								
Rural	1,148,856	424,356,317	27,289,098	452,230	452,097,645	4,388,401	3 82	9.7
Urban	360,005	78,521,775	7,384,126	2,172,192	88,078,093	1,670,848	4 64	19.0
Cities	319,634	129,231,595	16,925,710	8,047,616	154,204,921	2,950,136	9 23	19.1
Total	1,828,495	632,109,687	51,598,934	10,672,038	694,380,659	9,009,385	4 93	13.0

* This large decrease in personal property was due to a change in the Assessment Act, which exempted farm live stock, etc.

ASSESSED ACREAGE OF ONTARIO MUNICIPALITIES.

Year.	Townships.	Villages.	Towns.	Cities.	Total.
1904	24,138,846	93,947	155,978	46,403	24,435,174
1903	23,930,512	93,779	152,532	43,953	24,220,776
1902	23,727,010	96,967	151,305	43,953	24,019,235
1901	23,636,178	97,424	151,053	43,552	23,928,207
1900	23,568,104	97,363	151,621	43,552	23,860,640
.....	.....	.....	.....	.....	.....
1894	23,039,610	94,407	153,164	40,560	23,327,741

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